

UNIVERSITY OF ALBERTA

Studies of the Impact of Sign Modality

by

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the requirements for the degree of Doctor of Philosophy

in Special Education

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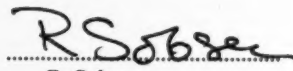
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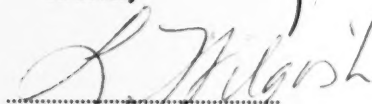
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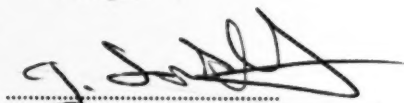
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Abstract

This research project addressed the impact of sign modality on both writing development and interpreting for writing development. A three-part approach to addressing the issue was implemented: 1) a review of the existing information on the writing competencies of deaf students, 2) a quantitative study of the impact of sign modality on the emergence of the writing skills of a mainstream deaf student, and 3) a qualitative study examining the experience of using a restricted pre-set modality when interpreting.

The outcome of the literature review brings into focus two primary issues: 1) the overall lack of progress in supporting literacy development for deaf students despite various methods and philosophies, and 2) the need for programs not only to report on the educational processes used in teaching literacy skills to deaf students, but also to evaluate the outcomes and hold their methods accountable.

The quantitative study of the relative efficacy of interpreting lessons using ASL and MCE when teaching a mainstreamed deaf student writing skills resulted in: 1) the development of a method that may be used to evaluate comprehension of sign modalities, 2) findings indicating that the more English-like mode of interpretation better supported English writing skills for this student, and 3) the revelation that the mode that was seemingly more conducive to writing skill improvement, was not the mode preferred by either the student or the interpreter.

The qualitative study of the experience of interpreting in a pre-set modality (without the option to engage in modality shifting) generated clear support for the role of the educational interpreter as a full participant rather than as a mechanical conveyor of information. The phenomenological analysis of the interpreter's experience revealed four primary outcomes: 1) interpreting is a dynamic process, 2) reflective self-analysis is part of interpreting, 3) interpreting includes specific psychological features, and 4) external factors influence the interpreting process. The results generate clear implications for interpreter training programs, educational institutions that hire interpreters, and the mental health and welfare of those who serve in this field.



DEDICATION

To my family with gratitude
for your support, love, and patience.

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CHAPTER 1

THE IMPACT OF SIGN MODALITY

Overview of the project

This research project addressed the issue of the impact of sign modality on literacy development for mainstreamed deaf students and on the functioning of the educational interpreter in mainstream English literacy lessons. A three-part approach to addressing the problem was undertaken: 1) research into the status of writing competencies of deaf students generally, 2) a quantitative study of the impact of sign modality on the emergence of the writing skills of a mainstream deaf student, and 3) a qualitative study examining the experience of using a restricted pre-set modality when interpreting. The research into literacy was limited to investigations of written competency as one aspect of literacy.

Review of the Literature

To understand the factors involved when a deaf student learns to write, it is helpful to consider writing not only as a product but also as a process (Paul, 1998) and as the interaction of the two (Luckner & Isaacson, 1990). Earlier studies of deaf students' writing generated consistent findings that the product was significantly different from that generated by hearing students (Bochner & Albertini, 1988). Berent (1988) reviewed product oriented studies and provided a summary of the errors and omissions associated with the writing of deaf students.

Some studies of hearing students' writing have focused on writing as a process (Paul 1998). The research indicates that students plan, edit, and revise even before they generate writing on paper. The ability to engage in these activities allows hearing students to generate written language that is more complex than their spoken language from the age of ten years. Many deaf students lack the English competence of their hearing peers. As a result their choices when revising are more limited. Their ability to recognize the need to revise or edit is limited to their level of linguistic competence.

Furthermore, deaf students' ability to plan is restricted to the linguistic forms they have acquired (Luckner & Isaacson, 1990). Chapter 2 provides a review of literature relevant to the development of writing skills by deaf children, out of which the quantitative questions emerged.

Quantitative Study

A review of the literature did not definitively address the dilemma of which modality interpreters should use when interpreting English writing skills lessons. Therefore, the question of modality choice for interpreters was investigated using a quantitative approach. The ability of a deaf child to acquire syntactic and semantic features of written English was measured in the context of an alternating treatments design. A student was presented with features of English writing to learn, which were interpreted using Manually Coded English in one treatment condition, and in alternate treatments using American Sign Language. The independent variables then were interpretation in American Sign Language (ASL) and interpretation in Manually Coded English (MCE¹). The study was implemented with a non-oral deaf student of hearing parents who was mainstreamed in a hearing classroom with the support of an educational interpreter. Selected syntactic and semantic targets were grouped on the basis of comparable difficulty. The balanced targets were randomly assigned to one of the alternating treatments. The subject was instructed in the use of the target features until criterion was met for one of the treatment targets. In addition, interim writing samples were collected to determine if the targets were being generalized to other writing situations.

Data collected included: 1) instances of the student's correct use of the target syntactic and semantic features, 2) instances of correct use of the treatment targets and control targets in a elicited writing sample, 3) ratings of the consistency of interpretation modalities, 4) rates of skill acquisition within each treatment condition. The data were subjected to visual inspection and statistical analysis.

¹ MCE as used in this study refers to Signed English not SEE I or SEE II.

The outcomes indicated that MCE was associated with higher rates of skill acquisition than was ASL. Furthermore, both MCE and ASL generated higher levels of skill acquisition and generalization than no intervention at all. Generalization of instructed targets was found to occur whereas generalization did not occur for the control targets. Examination of the consistency of interpretation ratings supported the distinction between treatment A and treatment B conditions. Chapter 3 of this dissertation provides detailed information on the quantitative study and its outcomes. The debriefing with the study participants led to the realization of the importance of the interpreter's experience with the process.

Qualitative Study

Subsequent to the quantitative project, which generated results indicating that modality of interpretation may differentially affect a student's acquisition of English writing skills, a study was conducted to examine the interpreter's experience of pre-set modality choice. The early literature on educational interpreting has generated a model for interpreters in which they were seen to function much as a mechanical instrument in translating information from oral/aural to manual/visual and the reverse (Stewart, 1998). Alternatives to the mechanical model have been posited. In the interactive model the interpreter's function is not only to translate information but also to facilitate communication. One of the primary functions of the interpreter as a communication facilitator might be presumed to be the exercise of professional judgement on the need for modality switching. The question then arises, "What is the experience of an interpreter accustomed to modality switching when asked to adhere to a single modality in the interests of increased English writing skill?"

A phenomenological design was implemented: 1) to examine pre-existing biases relative to the efficacy of ASL and MCE in the educational setting, 2) to collect data about the interpreter's lived experience of forced modality during the quantitative study, and 3) to analyse the data for themes that would reveal implications for forced modality use in the schools. The findings indicate

that interpreting with a preset modality was a dynamic process characterized by self-reflective analysis, specific psychological features, and external influences. The findings did not fit a mechanical model of interpreting.

Conclusions

The process by which a mainstream deaf student acquires specific syntactic and semantic English writing skills was examined using alternating treatments (ASL interpretation and MCE interpretation). The findings revealed that the MCE interpretation modality generated improvement to mastery scores that were significantly higher on average than ASL interpretation.

During debriefing, both the deaf student and the interpreter indicated that they had sign modality preferences *regardless* of the results associated with the use of a pre-set modality. The student having participated in the study indicated that he preferred interpretation in ASL even though the MCE had generated faster rates of improvement. The subsequent qualitative study was undertaken to examine the interpreter's experience of interpreting as a result of the quantitative results. The findings indicated that the interpreter felt restricted in his attempts to interpret in an interactive manner when he was not allowed to engage in modality shifting. The review of the literature, the accounts of the quantitative and qualitative studies and a more detailed conclusion are provided in Chapters 2, 3, 4, and 5, respectively.

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CHAPTER TWO

DEAF STUDENTS AND WRITING COMPETENCY: A REVIEW OF THE LITERATURE

Abstract

A review of the current literature in deafness studies was undertaken to address the research question: What proven means do we have to help deaf students attain writing competency? Attempts to improve the writing competencies of deaf students have focused on three major areas of investigation: 1) mode of instruction (Oral, Total Communication, and Bilingual-Bicultural), 2) teaching methods used (syntactic, semantic, and process approaches), and 3) general linguistic competencies of the students. As an introduction to the issues, a brief historical context for these developments is provided.

Historical Overview

The linguistic development of deaf children in a hearing society has posed problems for educators, parents, and deaf children themselves, throughout modern history. In North America there was a prolonged period of philosophical commitment to the education of deaf persons through an oral mode of communication (1880 to the present) or through oralism combined with sign systems (Lou, 1988). In the past three decades, many educational programs shifted from an oral approach to a Total Communication (TC) approach to attempt to improve literacy outcomes. These programs used Simultaneous Communication (SimCom) methods, which Lou (1988) criticizes as linguistically incomplete. Bochner and Albertini (1988) compiled an extensive review of the literature that indicates that, despite the recent wide spread implementation of TC programs in North America, deaf students continue to exhibit low English language performances in reading, writing, grammar, and spoken English. As a result of the failure to generate improved literacy outcomes or consistent visual presentations of English, the Total Communication model was succeeded by the implementation of Bilingual/Bicultural modes of instruction (Davies, 1991; Erting, 1978; Ferguson & Zimmer, 1991; Mason, 1991; Weber & McDonald, 1991), and by strict Seeing Essential English (SEE I) or Signing Exact English (SEE II) movements within mainstreaming in the 1990's.

The 1998 American Annals of the Deaf review of programs offered in Canada included information on the nature of fifty-two programs operating in various parts of the country. Programs that reported incorporating the use of ASL or LSQ² comprised fifty-seven percent of the respondents. Among the listed programs, seventy-one percent reported the use of Sign plus Speech Communication methods, seventy five percent of the programs incorporated oral/aural methods, and slightly less than two percent use Cued Speech.

Until students have been in such programs for a few years, it is very difficult to conduct outcomes-based research on the efficacy of such models. Furthermore, the research may be confounded by the unequal distribution of deaf children of deaf parents in Bilingual programs and deaf children of hearing parents in SEE I/II or oral programs.

² LSQ refers to the natural sign language that has evolved among the signers of the French community particularly in Quebec, Canada; langue de signe du Quebec.

Mode of Communication and Writing Competency

Instruction through natural sign languages

A study by Mozzer-Mather (1990) documents the improvement in the English writing skills of three deaf youths allowed to express and review their narratives in American Sign Language as a means to organizing the cognitive processes before engaging in the structural process of encoding in English print. Mozzer-Mather's interventions focused on writing process skills over specific structural components of the written narratives. The improvements reported included increased use of complex verbs, increased use of subordinate and coordinate clauses, and an overall decrease in grammatical errors. It is important to note that the subjects were selected for their fluency in ASL. As a result, the findings may only be generalizable to other deaf students having a competent first language.

Paul and Quigley (1987) summarized a number of the approaches to writing instruction as "free writing, paragraph pattern, grammar-syntax-organization, communication, and process" (p. 161). They emphasize the importance of eclectic instructional strategies incorporating signing and ASL story telling. In this way students would engage in low-level (mechanics) and high-level (organizational) aspects of writing. They acknowledge the importance of using fingerspelling or some common sign markers with ASL-signing students in order to demonstrate visually the specifics of English surface structure. Within this model, Paul and Quigley envision a role for Pidgin Signed English (PSE), citing research that found higher correlations between English competency and exposure to PSE than any other signed system. This is in direct contrast to the position taken by Luetke-Stahlman (1988), who suggests that PSE provides a model for neither ASL nor English and that the incompleteness of visual models contributes to low levels of literacy.

Both Weber and McDonald (1991) and Ferguson and Zimmer (1991) report on approaches to the use of American Sign Language as the medium through which literacy in English can be taught. Whereas Weber and McDonald used signing in their school classrooms, Ferguson and Zimmer discussed signing as a bridge to writing using computerized instruction with adults. In each case, the programs are described, but outcomes measured were not included. In programs that comprise a broad scope of student profiles, with varying hearing levels, linguistic competencies, and literacy objectives, qualitative research methods could be employed to generate

informative evaluations of outcomes. To date, this has not been done with either of the programs described.

Strong (1988) advocates for the development of English reading competency through initially ensuring ASL-based comprehension of the narratives. Andrews and Mason (1991) recommend that the development of effective reading strategies can be promoted by having reading teachers engage deaf students in extensive discussions conducted in sign language about the English text. This seems reasonable but may not often be the case in classrooms. As Ahlgren (1990) acknowledges, there are difficulties in achieving effective discussion between signing deaf children and their signing teachers who may not have attained true fluency in the sign language of their students.

Erting et al. (2000) point out that "children acquiring ASL, fingerspelling, and English literacy also need to understand the relations between the hand configurations of signs, fingerspelled letters, and English letters and words in print" (p. 44). Their focused research into the early language experiences of young children investigated the role of fingerspelling in early language formats. They found that deaf parents introduced fingerspelling into child-focused interactions when the children were only weeks old. The frequency of fingerspelling increased with the child's development, and with the contextual presence of written English.

Instruction through manually coded oral language systems

Because ASL is syntactically different from other languages such as English, an ASL statement does not have a word-to-word correlation to its conceptually equivalent English print form. For reasons such as this, sign representations of English have been developed by educational and linguistic researchers such as Bornstein (Bornstein, Saulnier, & Hamilton, 1980) and Gustason (Gustason, Pfetzing, & Zawolkow, 1972). Formalized, these sign representations of English, which are used in educational settings to further the deaf students' acquisition of English, have become known as systems of sign English (sE).

Luetke-Stahlman (1988) investigated the use of Sign English and its effectiveness in promoting literacy when used consistently and with a high degree of accuracy in both the home and the school. Luetke-Stahlman contends that the use of a complete representation of English is the most effective means of representing English and thereby promoting the acquisition of literacy.

Linguists such as Gustason et al. (1972) and Bornstein et al. (1980) developed systems of manually coded English in response to the research indicating that deaf students' early use of manual forms of communication correlated to later academic and cognitive gains not found among

students whose early intervention had not included a manual form of communication (Moore, 1985; Moore, Weiss, & Goodwin, 1978; Tervoort & Verbeck, 1967). Parents could often begin to communicate with their newly diagnosed deaf children using ASL-like signs in an English-like syntactic base. The result was the development of Seeing Essential English (SEE I) by David Anthony (Washburn, 1971), Signing Exact English (SEE II) by Gustason, Pfetzing, & Zawolkow (1972), and Signed English by Bornstein (Bornstein, Saulnier, & Hamilton, 1980).

In comparison studies of comprehension of messages presented in ASL or in Sign English, Hatfield, Caccamise, and Siple (1978) investigated the receptive abilities of 219 students at National Technical Institute for the Deaf in Rochester, New York. Subjects were rated as having high (deaf children of deaf parents who used sign), middle (deaf children of hearing parents who had been exposed to sign educationally) or low (little prior exposure to manual communication) levels of manual communication skill. The high manual group performed well on both ASL and sign English presentations. The middle group had a slightly higher receptive error rate but showed no significant difference in error rates between ASL and sE presentations. The low level group had the highest error rates with more errors in the ASL mode than the sE mode. Again, the critical factor would seem to be students' linguistic experience, not mode of communication.

An earlier comparison study involved Gallaudet students' understanding of Rochester Method (fingerspelling) presentations, colloquial sign presentations, and signed approximation to English (Siglish or Signed English). Higgins (1973) found that, for the transmission of factual information, signed English was preferable. Subjects' comprehension of non-factual information was not discussed and generalizability of these findings to the mode of instruction in the written features of English for deaf students may not be assumed. As well, the method of measuring the factual information understood may have introduced a reading element into the receptive sign investigation thus confounding the results.

Bilingual-Bicultural Modes of Instruction

Paul (1998), Mason (1991), and Strong (1988) report on models in practice that have built upon Cummins' interdependence hypothesis, which proposes that education in the first language is a prerequisite to development of effective cognitive processes in any subsequently acquired language (Cummins, 1978; Cummins 1987). Because deaf children are auditorily denied access to oral/aural languages, visual languages must be explored. However, English language achievement results of deaf students in Total Communication programs suggest that use of sign English is no more effective in improving written English literacy skills than is the use of an Oral educational

approach. Hence, one cannot look to the mode of instruction as the sole solution to the literacy deficit issue. A concerted effort to investigate linguistic competency in first and second languages may provide further insights into the reasons some deaf students achieve writing competency while others do not. This has provided the motivation for increased implementation of bilingual programs around the world.

In the Swedish educational setting, the bilingual approach to the education of deaf children has been widely adopted but the approach is seen to be bilingual-monocultural rather than bilingual-bicultural (Cullbrand, 1988). The Swedish program's emphasis is upon maintaining the equality of the two languages through exposure of the deaf child to a signing deaf adult and a hearing Swedish speaking adult (usually a parent).

On the basis of a growing body of research that suggests the effective learning of a second language is based upon the child's competence in a first language, a movement toward teaching deaf children English (or other oral/aural languages) as a Second Language has been proposed and in some instances implemented. The emphasis is on the development of the natural sign language (American Sign Language, Swedish Sign Language, French Sign Language) as the first language (Bouvet, 1990; Davies, 1991; Strong, 1988).

As early as 1970, Vernon and Koh proposed that knowing ASL as a first language might assist deaf children in developing better English skills (Berko Gleason, 1993). Recognizing the potential for deaf children to learn through a well-developed first language, a number of models for first language (L1) / second language (L2) instruction have been proposed.

Quigley and Paul (1984) suggested that bilingualism and ESL approaches are more successful within programs that subscribe to a developmental maintenance model, in which a high level of competence in both languages is sought, a well established first language is prerequisite to the development of English as a second language, and programs are more successful when teachers give equal status and attention to both languages. They also advise that the effectiveness of ASL/ESL approaches with children has yet to be evaluated.

Early work by Jones (1979) highlighted the finding that, when signing to instructors who do not know ASL, ASL-using students tended to omit or minimize the use of non-manual ASL signs. Jones concluded that the loss of ASL non-manual information in the communication between ASL signers and non-ASL signers underlay the omission of critical components of the English written form when those ASL signers translated their sign to print. As a result, the use of ASL in this manner did not generate the production of comprehensible or qualitatively acceptable English transcriptions. Birch-Rasmussen (1985) reported similar findings when deaf Danish

children translated Danish Sign Language (DSL) to written Danish: the non-manual aspects of the communication were lost in the print form.

Building on the identification of linguistic features of natural sign languages such as ASL, more comprehensive bilingual approaches evolved. Johnson, Liddell, and Erting (1989) proposed a bilingual model program for deaf children, based on a principle of access to education through American Sign Language and the introduction of English as a Second Language. The state education authority that commissioned the development of the model did not implement the model. Yet that bilingual-bicultural model has encouraged many schools across North America to develop and implement local programs.

This movement was not limited to the United States. In Canada, Mason (1991) discussed a school-for-the-deaf working model of bilingual education, which supported the importance of the minority culture's visual language (ASL) and the role of the majority culture's auditory-based language in its print form. Similarly, Weber and McDonald (1991) initiated a centre-based bilingual program of studies for adolescents in a congregated school-for-the-deaf program. Unfortunately, neither reported on the efficacy of these models relative to writing competency.

Implementation of programs of bilingual or ASL/ESL education is becoming more common. Although many schools report the use of ASL as a language of instruction, few have published their field-tested curricula for widespread use. Hence, standardization of programming has not been achieved. Furthermore, the trend of integrating deaf learners rather than enrolling them in congregated programs for the Deaf makes ASL/ESL program implementation difficult due to limitations on numbers of native or competent signers in community settings (Woodward, Allen, & Schildroth, 1988). Therefore, it is deemed essential that the deaf student's language skill development be studied in the integrated school setting to provide the necessary background information on English Language instruction in the mainstream. This information, together with emerging Bilingual-Bicultural program studies, could form the basis for program development for the approximately 70 percent of Deaf and hard-of-hearing students (Schein, Mallory, & Greaves, 1991) now being educated in hearing schools.

Many of the initial difficulties reported in programs where an oral language in the written form is taught through a native sign language reflect a lack of attention to the linguistic characteristics, such as the non-manual aspects, of the sign languages used. This would seem to suggest that the closer the sign forms are to the target written form, the higher the success rate for achieving improved writing skills will be. As a result of these findings, the use of visually complete manually coded oral languages would seem to be worthy of investigation. Further

investigations of both MCE and ASL-using Deaf students may reveal that they are (a) transcribing only the aspects of their fluent sign communication of which they are metalinguistically aware, in which instance the non-manual aspects of the sign language need to become part of the students' metalinguistic curriculum, or (b) transcribing only the aspects of the sign language that they observe the hearing and speaking person to be using, in which instance the fluency of the teachers and parents needs to be improved to provide a more complete sign model to be transcribed.

Teaching Methods and Writing Competency

Structural and Semantic Approaches

Kretschmer and Kretschmer (1978) attributed the persistent distinction between the writings of deaf and hearing students, in part, to the educational methodology. To that point, methodology had supported the teaching of written English to deaf students using a structural approach rather than a semantic approach. Establishing a truly semantic approach necessitates ensuring the students' comprehension of the printed form through an approach that minimizes the confusions that have typically arisen when employing an Oral or Total Communication methodology. One means of ensuring comprehension for any student might be to allow the student to access the meaning underlying the print through competency in a first language, and subsequently apply this knowledge base to acquiring competence in the second language's print form. This philosophy incorporates the use of ASL as the language of instruction.

As Paul and Quigley (1987) suggested, an eclectic approach to English writing instruction was needed. In the past few years, the eclectic approaches in the classroom have come to include a writing processes focus, and in particular, emphasis on writing for a meaningful audience and purpose.

Writing Process

Written language instruction, both for deaf students and for students in the regular education stream, has undergone a recent paradigm shift. Whereas past efforts to teach writing skills had focussed on the product or surface structure, more recent efforts have focussed on the process underlying the creation of the surface structure (Graves, 1994).

Planning, writing, revising, and publishing are all part of the writing process instructional practices used in classrooms of deaf students, hearing students, and in classrooms serving hearing

students and integrated deaf students. The ability of deaf students to perform planning, writing, and revising steps in the writing process remains unsubstantiated, according to Schirmer (1994).

Previously, Edmunds, Cumming, and Rodda (1991) reported on the revision abilities of deaf students in a variety of educational settings. Older deaf students (ages 15 to 20 years) performed more syntactic and more semantic revisions than did younger deaf students (ages 10 to 14 years). They also noted the importance of relevant content in the lessons presented to the deaf students. This is consistent with other program focuses on selection of writing tasks that will be meaningful or relevant to the students (Quinley, 1997; Schniederman & Wood, 1996).

Revision strategies of deaf students (ages 16 to 21 years) were examined by Livingston (1989). Livingston noted that the students were more likely to revise at the word level, then phrase level, then sentences level, and finally, then globally. As well, surface structure revisions were noted as more frequent than semantic revisions. Therefore it would be advisable to conduct research that investigates structural and semantic skills separately.

Dialogue Journals

Dialogue journals are one means used to provide deaf students with a clear audience and purpose for writing competently. In studies of deaf students' writing skills, Kluwin and Blumenthal-Kelly (1991) found that deaf students, paired with hearing students to exchange journal dialogues, exhibited improved quality of their journal entries when long-term dialogues were maintained, but not when exchanges of shorter duration occurred. The journal writings of 204 pairs of deaf and hearing students in 10 public school districts were analyzed. In this study, students ranged in age from 10 to 18 years old. Analysis of the findings revealed that improvement in writing skills seemed to be dependent upon a pre-requisite minimal skill level, motivation to interact with hearing journal partners, and presence of shared interests between the hearing and deaf partners.

Edmunds (1991) also employed a journal format to study deaf students' writing. Edmunds found that journal writing between deaf students and their teachers generated mixed results. The mixed results may reflect the conditions suggested by Kluwin and Blumenthal Kelly (motivation, pre-requisite skill, and common interests).

Studies employing a broader variety of techniques consistently found that deaf students continued to have inferior written expressive skills when compared to hearing students (Aldersley, 1985; Bullis, Freeburg, Bull & Sendelbaugh, 1990; Gustason, 1985; Heidinger, 1985; Karchmer, 1985). Berent's (1988) study of the syntactic abilities of deaf college students concluded that,

subsequent to instruction in English writing, some students continued to demonstrate slow but grossly delayed gains in writing skill while other deaf subjects showed no gains whatsoever.

Schneiderman and Wood (1996) documented the use of dialogue journals exchanged between deaf junior and senior high school students and teachers-in-training. The results reported were anecdotal only. The deaf students may have screened themselves, as only those volunteering to write were included in the project. This does not negate the positive outcomes (increased attention to clarity of expression, increased length of communications) reported by the students but may limit the generalizability of the results.

Strassman and D'Amore (1996) recently undertook a similar project pairing deaf students and college students training to be teachers of the deaf and hard-of-hearing. Strassman and D'Amore reported that the deaf students demonstrated improved attention to higher level skills such as organization and elaboration. However, electronic communication rather than traditional letter writing was found to result in increased volume of writing but decreased accuracy in spelling and elaborations. The importance of the sense of a real audience and purpose was identified anecdotally by students as contributing to the positive experience in the project. Strassman and D'Amore, like Schneiderman and Wood, do not elaborate on the evaluation procedures, other than anecdotal comments from students that generated the reports of "improved" communication.

Writing for publication

Quinley (1995) outlines a project in which he, as the teacher, encouraged his deaf and hard-of-hearing high school students to write for a school newspaper. Quinley emphasizes the importance of providing deaf students with a reason to write, the use of the principles of writing process theory, and the opportunities for revision afforded in writing that is composed on computer software programs. Quinley does not delineate the nature of the students' school experiences or linguistic competencies of the students involved in the project, but these must be considered as possible factors affecting students' writing progress.

General Linguistic Competencies and Writing Competency

First Language/Second Language Development

The examination of writing as a process leads to the acknowledgment of the cognitive processes prerequisite to the three stages of writing, and the role of fluent first language (the preferred language of thought) becomes evident. For deaf children, for whom language is a barrier

rather than a facilitating device (Moore, 1987), difficulties with written language can be conceptualized as difficulties creating a clear and concise expressive form using incomplete processing information as a result of an incomplete first language. Many second language learners initially translate information heard (or read) into the first or competent language for processing, compose their response in the first or competent language, then translate this thought process into the form of the second or emerging language for expression. This process of translation and reverse translation is gradually eliminated when the second language learner acquires increasing competence in the second language. For the deaf student the translation and reverse translation process breaks down when no first/competent language exists in which to process the second language messages. As a result, no basis in experience or understanding necessary for higher level competency or fluency in the second language is ever established. The writing process paradigm has helped educators of the deaf to see the potential role of ASL in the development of English language competency. Yet even an ASL/ESL approach is predicated on the student's fluency in ASL as a first language. Because 95 percent of deaf students have hearing parents and families, the development of fluency in ASL involves language learning processes rather than language acquisition processes and is often delayed beyond the optimal language learning years.

Bouvet (1990) advocated for the provision of accessible communication in a first language employing a visual modality that deaf children can process. Bouvet argued that the deaf child can "reach his or her full potential ... if offered (*communication*) in a visual mode" (pp. 131). Because of their hearing impairment, very few deaf students arrive at school with fluency in English as a first language. Paul and Quigley (1987) note that, "if deaf students come to school knowing a language, this language is most likely to be American Sign Language" (p.140). Quigley's statement does not address mainstreamed deaf children's experiences. More than 90% of North American deaf children have hearing parents, most of whom do not have any prior knowledge of ASL. Many of the hearing parents do not choose to use a manual means of communication with their children, and if they do choose a manual form of communication, they often favor some form of Sign English, which, while requiring the adoption of a system of manual-visual communication, does not require their learning a new grammar or "language". Deaf students who arrive at school with fluent ASL as a first language are most often deaf children of deaf parents. The hearing parents who choose oral or SE methods of communication would argue that English, not sign, is their deaf child's first language (Lintz, personal communication, March 5, 1993). Research on students who are fluent communicators in sign English upon arrival at school is needed.

English Literacy

Bochner and Albertini (1988) provide an extensive review of the reading and writing competencies of deaf school students. Summarizing Bochner and Albertini's findings on reading comprehension, one may note that about one-half of the population of deaf school leavers reads at the fourth grade level or below, that about 10 percent of deaf school leavers read above the eighth grade level, and that deaf students' reading achievement scores tend to increase less than 0.3 grade equivalents per year of schooling.

Written English

Because the expressive English language produced orally by deaf students is often difficult to understand, the expressive English language of deaf students has been studied in its written form more frequently than in its spoken form (Moore, 1987). As early as 1940, Heider and Heider (cited in Moore, 1987) were using comparative experimental approaches to analyze the writing of deaf and hearing students. Heider and Heider noted that the differences between the deaf students' written language samples and the hearing students' written language samples were not only quantitative but also qualitative. Quantitatively, deaf students generate approximately 100 errors per 1,000 words (Moore, 1987). Qualitatively, deaf writers use shorter sentences, fewer conjoined or subordinate clauses, more articles and nouns, and fewer adverbs and conjunctions. Typical grammatical deviations from the hearing norms include errors in verb tense and agreement, misuse of articles and prepositions, and incorrect use of coordinating and subordinating conjunctions (Strong, 1988). In a seminal paper in the investigation of deaf students' writing, Cooper and Rosenstein (1966) noted that deaf children used shorter, simpler sentences than did the hearing peers. As well, Cooper and Rosenstein found the writing of deaf students to be characterized by use of more content words than one finds in the writing of hearing students. These qualitative differences in written English limit the communicative abilities of deaf school leavers both semantically and pragmatically. Since the publication of Cooper and Rosenstein's paper, research has been more likely to support their findings than dispute them.

Studies of English Writing Skills Among Deaf Students

Schirmer (1994) summarized the research into the reading and writing development of deaf students. The summary is conspicuously weighted to research and practices in the area of reading; meanwhile, attention to effective practices in writing skill development is limited. Schirmer

(1994) and, more recently, Stewart et al. (1998) reviewed writing process practices, and dialogue journal writing. There are no definite answers as to which theoretical models and strategies best support literacy development for deaf students.

Summary

The implications of Berent's 1988 findings of little or no improvement despite intervention, if replicated, could drastically change the goals of education for deaf students. The ongoing work of Stewart, and Luetke-Stahlman, may provide insight into the effectiveness of sign English in instructional settings where the teacher is responsible for the lesson and the sign production.

The work of Brasel and Quigley (1977), who studied the effects of certain language and communication environments on the development of language in deaf children, influences the understanding of starting points in teaching English writing competency skills to deaf children. The starting points and the means of teaching writing competency skills have been studied by Kluwin and Blumenthal Kelly (1991), who introduced dialogue journal writing and measured encouraging improvements in the writing of the deaf member of the dialogue. While Livingston et al. (1994) compared ASL and transliteration for effect on ability to answer questions arising from the content of the interpreted message, the effect of the mode of interpretation on a written response was not considered. Nor was that study extended from the college setting into the regular school system. By virtue of the fact that the students in Livingston's study were college students, a certain minimal standard of English competency may be a characteristic of that sample not shared with students in secondary schools or even in elementary schools. While isolated studies probe areas of potential, no generic strategies or methods for improved literacy have been widely tested.

Specific Problems Presented in the Literature

Researchers in the field of deaf education recently have generated a few studies on written language skill acquisition among its target population. While Quinley (1997), Strassman and D'Amore (1996), and Schneiderman and Wood (1996) document ongoing projects, both quantitative and qualitative research-based information is minimal. Livingston, (1989), Edmunds (1991), Greaves (1991), and Kluwin and Blumenthal-Kelly (1991) have provided initial investigations of the process of teaching writing to deaf students. Ongoing research is necessary, particularly in the light of the findings reported by Berent (1988), suggesting that many deaf students may never benefit from instruction in written English beyond the basic writing competency level. Many of the previous studies of deaf students' writing skills have been

descriptive of the unchanging dilemma facing deaf students and teachers of the deaf, rather than evaluative and suggestive of new interventions or improvements to existing educational practices.

A second problem evident in the literature is that much of what little is known about deaf and hard-of-hearing children in the mainstream does not address writing competency issues (Moore, 1991). While attempts to predict success in the mainstream exist (Bunch, 1988), the "best" candidates for successful mainstreaming have been identified as students with good use of residual hearing, strong language skills, and intelligible speech. Hence, few non-oral deaf students have been considered candidates for mainstreaming, resulting in a very small population upon which to base quantitative studies.

The literature does not present a broad base of information regarding various modalities of interpretation used in the teaching of writing competency for the estimated seventy percent of students who are now mainstreamed into hearing schools (Stewart et al., 1998; Stratiy, 1991). Typically, interpreters have been trained to be proficient in American Sign Language but not in other sign modalities. Furthermore, the persons being employed as educational interpreters are not exclusively trained interpreters. Many are educational assistants with an interest in and some study of American Sign Language. These educational interpreters, or communication aides, may be using neither American Sign Language nor sign English, but rather their own version of Contact Sign that results from the contact of the two languages. The study of writing skill instruction with attention to the control or documentation of the form of interpretation used, rather than reported to be used, is scarce.

Several questions emerge from a review of the literature on writing competency for deaf students in the mainstream. As with many issues in Deaf Education, there are seemingly more questions than answers. Some of the questions have persistently eluded answers. One such question is: Can English writing competency be achieved by the majority of deaf students? One hundred and fifty years of educating deaf students in the mainstream and congregated settings have yielded little evidence for improvement in the substandard writing competency scores achieved by deaf students relative to their hearing peers (Warden, 1993).

Setting aside the historical debate between proponents of oralism versus manualism, one might focus one's attention on that portion of the deaf student population that will use a manual communication base in their educational years. The students who have used ASL in their homes, commonly referred to as the Deaf Children of Deaf Parents sub-group, consistently outperform their matched peers whose first language in the home is not ASL, typically designated as Deaf Children of Hearing Parents (DCHP). One must consider then the possibility of the necessity of

providing students with a basis in ASL (or LSQ or other natural manual languages), or a complete visual representation of the English language (Paul, 1998), as a first language, as a pre-requisite to the acquisition of English writing competency.

If one further focuses one's attention on the needs of deaf students using manual communication as a first language while mainstreamed, one presumes the intervention of sign facilitators often called educational interpreters or communication aides. To achieve the goal of writing competency for this sub-group of students, one must investigate which modality should be employed for educational interpretation of English writing instruction. Furthermore, is one modality preferable for all interpreting? Or is the modality of choice subject to specific conditions and therefore variable?

Do the independent variables of English writing skill instruction interpreted into ASL, and English writing skill instruction interpreted into MCE, provide discrepant results in writing skill improvement? If so, under what conditions? Does sign English, which preserves the surface form of English, better represent syntactic information for the student than ASL, or not? Does American Sign Language, which preserves the intent of the communication, better represent semantic information for the student than sign English, or not? Perhaps no significant gains are associated with one or the other modality and attention should be shifted to questions of writing competency development other than the modality of educational interpreting.

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CHAPTER THREE

AMERICAN SIGN LANGUAGE OR MANUALLY CODED ENGLISH
INTERPRETATION:
RELATIVE EFFICACY FOR INTERPRETING ENGLISH WRITING
SKILLS LESSONS FOR A DEAF STUDENT

Abstract

An alternating treatments single subject research design was used to investigate of the impact of interpretation modality on a deaf student's acquisition of English writing skills. Two interpretation modalities, American Sign Language (ASL) and Manually Coded English (MCE), were studied. The data collected in both conditions were the percentage correct uses of specific English writing features produced during treatment sessions. Both modes produced higher percentages of correct target usage than did the control condition. The MCE interpretation modality was linked to faster rates of improvement of mastery than the American Sign Language interpretation modality, overall. Therefore, both treatments have some degree of functional significance in that both generated improvement in the usage of the syntactic and semantic writing skills being taught.

Description of the Study

The study assessed the relative efficacy of two interpretation modalities: American Sign Language (ASL) and Manually Coded English (MCE). The relative efficacy of these was studied in the context of written English instruction delivered to a non-oral, prelingually, profoundly deaf adolescent student. This student was in an integrated school setting and dependent upon an interpreter for communication. This study was designed for single-subject data collection and within-subject comparison analyses of the data. Using an alternating treatment design, the relative

efficacy of ASL and MCE modalities of interpreting were studied in reference to syntactic and semantic aspects of English writing skills being taught.

To establish a critical level of experimental control: 1) the subject selection criteria specified no other handicapping conditions or known environmental or social confounding factors, 2) treatment sessions were video-taped for verification that the assigned modality had been used, 3) ratings were quantified for the interpretation consistency analysis, 4) the subject's existing written English skill level was measured, and 5) receptive competence in ASL and MCE were measured to ensure comparable skill levels.

Subject

Data collected from files indicated that the subject was prelingually profoundly deaf, and of average intelligence. The student was a grade eleven high school student dependent on visual-manual language for communication, and the only deaf person in an otherwise hearing family. The Test of Information Recall was administered to verify that his receptive competencies in ASL and MCE were comparable (62.5% and 58.3% respectively).

Design

The selected student participated in randomized back-to-back alternating treatment sessions during which the teacher instructed him on the correct use of semantic or syntactic features of English writing that were not part of his pre-test competency set. The alternating treatments independent variables were ASL interpretation or MCE interpretation provided by the educational interpreter. The dependent variables were the correct usages of the syntactic or semantic features being taught. (See Appendix A2 for further information on the study design.)

The primary question being investigated was: "Which modality of interpretation (ASL or MCE) presents the deaf mainstreamed student with the most effective access to written English instruction reflected in his subsequent production of syntactic and semantic written English targets?"

Data collection

The data being tracked were correct productions of targeted syntactic or semantic features in the student's writing. Initially, the student was administered the Test of Written Language - Second Edition (TOWL-2). From the writing sample elicited in the "Spontaneous Writing Subtest," a Kretschmer Analysis of Written Language was conducted to identify syntactic and semantic features that the student was using (See Appendix 3). Targets for this study were selected if they had a zero percent correct usage rating in the writing sample (See Appendix 4). Pairs of targets were created for the alternating treatments based upon their comparable levels of difficulty using the stages of language development outlined by Quigley and Paul (1984). A third target of comparable difficulty was assigned to each pair as a control target.

During randomly alternating counterbalanced treatments, the student was instructed in the correct use of the targeted pair of semantic or syntactic features. Instruction consisted of a Model-Lead-and-Test format lesson (See Appendix A5). After each treatment, the number of times the target was correctly used by the student was converted to a percentage. Treatment sessions for the pair of targets continued until mastery was achieved for one of the targets (mastery = 75% correct usage of the target over three consecutive sessions).

Subsequent to the student's achieving mastery on two targets in the product-oriented writing activity, he was asked to write a short passage on a topic of current interest to him. The instances of correct usage of the treatment and control targets were measured in the context of this process-oriented writing activity (See Appendix A6).

The independent variables were the modalities of interpretation (ASL or MCE). To ensure that the assigned modality had in fact been used during each treatment session, all sessions were videotaped. Ratings of the consistency of the interpretation were determined using videotaped samples of the treatment sessions. Based upon a variation of a checklist developed by Stewart (1985), the raters designated the interpretation modality as predominantly ASL or MCE based on the presence or absence of discriminating features such as classifiers, fingerspellings, facial PA signs, directional signs, instances of ASL violations, English morpheme markers, fingerspellings,

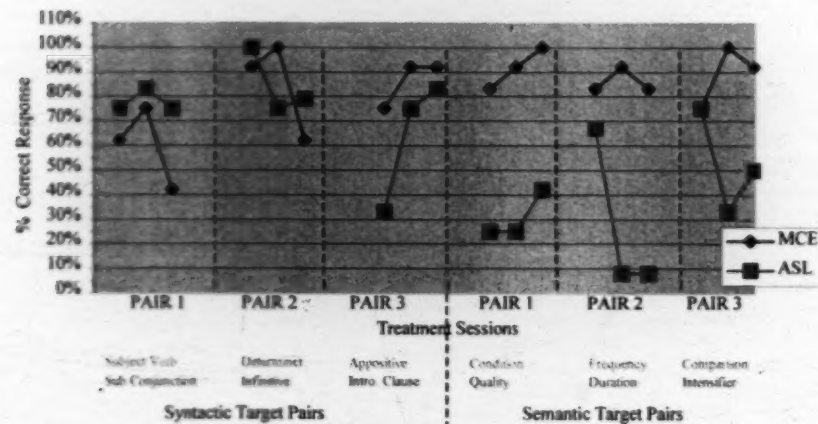
articles, be-verbs, and initialized signs (See Appendix A7). A criterion of .90 for inter-rater reliability during training was met before intervention sessions were rated.

The dependent variable was the number of times out of a possible twelve (converted to a percentage score) that the subject correctly produced each target per treatment. During the study, the student was presented with three pairs of syntactic targets and three pairs of semantic targets to master. For each pair of targets, one target was randomly assigned to the ASL condition and the other to the MCE condition.

Results

The percentage scores achieved on the dependent variables under the treatment conditions, for syntactic pairs and semantic pairs of writing skill features are presented in Figure 1.

Figure 1 Percentage Correct Achieved on Syntactic & Semantic Targets x Treatment Condition (ASL or MCE)



Syntactic Target Findings

The correct usage of the first set of English writing syntactic targets (ASL: subject/be-verb number agreement, MCE: inclusion of the subordinate conjunction, that or what, and CONTROL: do support) was taught by the teacher and interpreted to the student. Mastery was reached in the

ASL mode after three treatment sessions. For the second set of syntactic targets (ASL: coordination of determiner inclusion and noun number agreement, MCE: infinitive form, and CONTROL: participle), mastery was reached in the ASL mode after three treatment sessions. For the third grouping of syntactic targets (ASL: punctuation to delineate an appositive, MCE: correct use of punctuation to delineate an introductory subordinate clause, and CONTROL: punctuation to delineate direct discourse), mastery was reached in the MCE mode after three treatment sessions.

Semantic Targets Findings

For the first set of semantic targets (ASL: modifiers of condition, MCE: modifiers of quality, and CONTROL: modifier of nonexistence), mastery was reached in the MCE mode after three treatment sessions. For the second grouping of semantic targets (ASL: modifier of time: frequency, MCE: modifiers of time: duration, and CONTROL: modifier of time: beginning) mastery was reached in the MCE mode after three treatment sessions. In the third set of semantic targets (ASL: modifier: comparison, MCE: modifier: intensifiers, and CONTROL: modifier: inclusion), mastery was reached in the MCE mode after three treatment sessions.

Rate of Improvement

The rate of improvement toward mastery of the targets was calculated using the last percentage score achieved less baseline percentage score divided by number of intervention sessions required to reach mastery. This yielded a measure of the *rate* of improvement in each of the treatment conditions. The results are recorded in Table 1.

Table 1: Rate of improvement to mastery (mean and standard deviation)

Treatments	Treatment Target Categories		
	Syntactic	Semantic	Total
ASL mean	26.39	11.11	18.75
s.d.	1.39	7.35	7.37
MCE mean	21.76	30.56	26.16
s.d.	8.37	2.78	7.37
OVERALL mean	24.07	20.83	22.45
s.d.	5.94	11.75	9.04

A *t* test for related measures was used to determine whether the mean rates of improvement to mastery by treatment were significantly different for the syntactic targets. This *t* test was

conducted after the calculations of autocorrelation of lag 1 revealed that the data were not serially dependent (Kazdin, 1982). The resulting t value of 1.1470 with 2 degrees of freedom was found to be non significant at all levels.

For the semantic targets, the t test was used to determine whether the mean rates of improvement to mastery by treatment were significantly different. The resulting t value of 6.0621 was found to be significant at the 0.05 level.

A third t test was conducted to examine the overall rates of improvement to mastery for ASL treatment and for MCE treatment. A t value for related measures of 1.2649 was found to be nonsignificant at all levels. This reflects the averaging of results but often masks differential results as found by the two previous t-tests.

Finally, for the overall syntactic and semantic data, the t value of 0.5914 (df=5) was found to be nonsignificant. This would seem to indicate that the type of English writing skill taught did not create differential effects.

Consistency Rating of Mode of Interpretation x Assigned Treatment Mode.

The sampled sessions of videotaped interpreting were scored for number of MCE-like scored features less the number of scored ASL-like features. Where the score for the MCE features was higher than the score for the ASL features, the interpretation was rated as being predominantly MCE. Likewise, where score for the ASL features was larger than score for the MCE features, the interpretation was rated as being predominantly ASL. Where the difference was zero, that observation session was rated as non-dominant (ND). The findings are summarized in Table 2.

Table 2: Interpretation consistency, assigned treatment mode and scores achieved.

Observation session	Rater ₁	Rater ₂	Assigned Treatment	Consistency Rating	Percentage Correct
1	ASL 1	ASL 1	ASL	2	100
2	ASL 1	ASL 1	ASL	2	100
3	ND 0	ND 0	ASL	0	100
4	ASL 1	ASL 1	ASL	2	100
5	MCE 1	MCE 1	MCE	2	100
6	ASL 1	ASL 1	ASL	2	75
7	ASL 1	ASL 1	ASL	2	33
8	MCE 1	MCE 1	MCE	2	75
9	MCE 1	MCE 1	MCE	2	92
10	MCE 1	MCE 1	MCE	2	83

Data were analyzed to determine any relationship between the acquisition of English writing skills competency and rating of interpretation modality. The data consisted of the ratings assigned to each videotape sample of interpretation (0, 1, or 2) and the percentage correct usage score achieved by the student during that intervention session. The percentage correct scores ranged from 33% to 100% for sessions receiving the maximum consistency rating of 2. As no sessions were rated as having a consistency score of 1, no data were available for analysis for that circumstance. Only one session was rated as having a consistency rating of 0, and the subject score achieved during this session was 100%. No linear relationship was found to exist between the percentage score achieved by the student and the consistency score rating based upon the data available within the scope of this study.

Control Targets

Samples of the student's writing were elicited with the student selecting a current topic of interest on which to write. The writing samples collected in this manner were evaluated for: a) correct usage of the control targets, and b) correct usage of the intervention targets. This allowed for the monitoring of target generalization from a product-oriented lesson to a process-oriented task such as writing on a writer-selected topic. The control targets deemed to be developmentally comparable in simplicity or, conversely, complexity, to the treatment targets occurred spontaneously in none of the interim writing samples. These findings are summarized in Table 3. Items not found in the process samples are indicated by the designation NF. Items not yet taught at the time the samples were collected are left blank unless the target spontaneously occurred. For each instance of a target's occurrence, it was rated 1 if used correctly and 0 if used incorrectly.

Table 3: Occurrence of targets in interim writing samples

Targets		Sample 1	Sample 2	Sample 3	Sample 4
First Syntactic pair plus control	ASL Subordinate conjunction	NF	NF	NF	0/2
	MCE Subject / Be-verb	5/7	4/4	2/2	6/8
	CONTROL Do support	NF	NF	NF	NF
Second Syntactic pair plus control	ASL Determiner	NF	1/6	1/4	0/11
	MCE Infinitive	NF	NF	NF	NF
	CONTROL Participle	NF	NF	NF	NF
Third Syntactic pair plus control	ASL Appositive		1/1	NF	NF
	MCE Introductory Clause		NF	NF	NF
	CONTROL Direct Discourse		NF	NF	NF
First Semantic pair plus control	ASL Condition			NF	2/2
	MCE Quality			3/3	NF
	CONTROL Nonexistence			NF	NF
Second Semantic pair plus control	ASL Frequency				NF
	MCE Duration				NF
	CONTROL Beginning				NF
Third Semantic pair plus control	ASL Comparison *	0/1			
	MCE Intensifier				
	CONTROL Inclusion				

The accuracy of the usage of the targets that occurred in the interim writing samples was compared visually with the accuracy with which those same targets were used when the student knew them to be the targets (during the product-oriented direct instruction).

Table 4: Percentage correct target use in intervention sessions and subsequent elicited writing samples

Target	Target Data by Treatment Session			Target Data by Writing Sample			
	1	2	3	1	2	3	4
Subordinate conjunction	62	75	42	NF	NF	NF	0
Subject / be-verb agreement	75	83	75	71	100	100	75
Determiner / number agreement	100	75	79	65	17	25	0
Appositive	33	75	83	*	100	NF	NF
Modifier: condition	25	25	42	*	*	*	100

The target had not yet been taught at the time that the writing sample was collected. Neither was the target found to occur spontaneously within the writing sample.

The targets that had reached mastery (subject-be verb agreement and determiner-number agreement) were used not only in the product-oriented tasks but also in the process-oriented tasks. This suggests that mastery (75 % correct usage over three consecutive treatment sessions) can, but does not always, result in immediate generalization of learning beyond the treatment sessions.

Summary

This study examined the relative merits of teaching English writing skills to a mainstreamed deaf student through ASL interpretation³ and through MCE interpretation. The study, because of the single subject design, should not be interpreted as offering definitive proof that one method of interpretation (ASL or MCE) is better than the alternate at all times for all students, or even for all students with specific ranges of cognitive functioning, receptive competencies, or even for specific levels of interpretation modality consistency. The study does successfully demonstrate the use of a discriminating procedure for determining which mode of interpretation is functionally more efficient in supporting improvement in this student's English writing skills. As well, sufficient indication of differential effects was found to justify further study into the relative merits of ASL and MCE use in interpretation and indicators of subject-modality matching within the educational setting. Further, the findings direct English language educators working with deaf students to re-examine the literature on second language learning.

Overall, the MCE mode supported improvement to mastery in four of the six target pairs (1 syntactic and 3 semantic targets). The difference in rate of improvement in the semantic target scores under the two conditions is significant with rate of improvement in the MCE mode surpassing the rate of improvement in the ASL mode.

The control targets were found never to occur spontaneously in the interim writing samples. The absence of improvement in these control targets is clinically significant relative to

³ASL interpretation, used here as an instructional strategy, should not be confused with conversational ASL or other forms of ASL when the communication occurs directly between two signers.

the improvement in the usage of the targets instructed under both of the treatment conditions. This would seem to indicate that instruction interpreted in either ASL or MCE is preferable to the control condition. The results of this analysis of interim writing samples exemplifies the need for instructors to be cognizant of not only what they are teaching but also what they are not teaching to deaf students of English writing skills. The complete lack of spontaneous improvement in the use of the control targets in the interim writing samples serves to remind educators that the deaf learner's success with English usage is often limited to those features of English that have been directly taught. Furthermore, while the rate of improvement of English writing skills varied from semantic to syntactic targets, and from MCE to ASL treatments, the rating of the consistency of the interpretation modality did not vary. Hence no correlation effect was found between acquisition and consistency.

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CHAPTER FOUR

PRE-SET MODALITY AND THE INTERPRETER'S LIVED EXPERIENCE

Abstract

A qualitative investigation of an interpreter's experience of being restricted to interpreting in a pre-set modality was investigated. The interpreter had been restricted to the use of ASL-only or MCE-only when interpreting to a mainstreamed profoundly deaf student in a high school writing skills project. The findings indicate that the interpreter's experience of educational interpreting under these conditions includes four primary outcomes: interpreting is a dynamic process; reflective self-analysis is part of interpreting; interpreting includes specific psychological features; and external factors influence the interpreting process. Overall, the results support an interactive "full participant" model for educational interpreting.

The lived experience of the educational interpreter interpreting in a pre-determined modality for a deaf student in an English writing skills project was examined. By focusing on the perspective of the interpreter, the critical aspects of the experience of interpreting were identified, contributing to our understanding of the interpreting process in the educational settings and the phenomenon of interpreting.

The process of interpreting is critical to the success of any teacher-student dyad in a mainstream educational setting where the regular classroom teacher is not fluent in sign and the student is not fluent in lipreading or speech: the interpreter provides the communicative bridge that allows education to occur.

The body of literature on lived experiences of educational interpreters is very small at this time. The proportion of interpreters working in educational settings is estimated to be more than half of interpreters in the USA (Stuckless, Avery, & Hurwitz, 1989) and at least one-third to one-half of interpreters in Canada (Schein & Yarwood, 1990). Despite this, a recent text on interpreting (Stewart et al., 1998) contains less than one page of accounts of real-life experiences of educational interpreters.

Various models of interpreting exist, including: a) Cognitive, b) Interactive, c) Interpretive, d) Communication or Mechanical, e) Sociolinguistic, and f) Bilingual-Bicultural model. These models may be characterized as representing various positions along a continuum that would reflect the degree of freedom the interpreter might bring to the interpreting situation. At one end of the continuum would be the Communication or Mechanical model which characterizes interpreters as mechanical "language conduits" (Stewart et al., 1998, pp. 45), unaffected by the environment or situation. At the opposite end of the continuum one would find the "full participant" models such as the Bilingual-Bicultural model, that not only incorporates aspects of the Sociolinguistic, Interpretive and Interactive models, but also includes the concept of interpreter as helper (Stewart et al., 1998, pp. 51).

In this particular study, the interpreter was restricted to the modality of interpreting prescribed by the writing skills development project, but retained the evaluative aspects of interpreting associated with the Cognitive model, in which the interpreter is acknowledged to be "susceptible to visual feedback cues from the participants as well as to their own feelings about how accurate their interpretation (signed or spoken) may be" (Stewart et al., 1998, pp 32).

Issues of Modality versus Language

In North America, Deaf people exposed to Deaf Culture communicate using one of two visual languages: ASL (American Sign Language) or LSQ (langue de signe du Quebec). Believing that deaf children could better learn English skills if they had a visual language that used English grammar, linguists developed systems of manually coded English. The result was the development of Seeing Essential English (Anthony, 1971), Signing Exact English (Gustason, Pftzing, & Zawolkow, 1972), and Signed English (Bornstein, 1975). These modalities, which are visual-manual representations of English, not languages in their own right, have been in use in educational settings since their invention. As students are mainstreamed, the issue of modality shifts from the teacher to the interpreter.

The status of educational interpreters was reviewed locally by The Premier's Council on the Status of Person's with Disabilities (1994). The resulting set of standards for interpreters adheres to a primarily "mechanical" model of the interpreter, conveying messages without feeling. This model, and the contrasting "full participant" model are the basis of an insightful re-interpretation of an American Supreme Court decision (Seigel, 1995). Seigel observes that the mechanical model represents the work of the interpreter as a form of "mechanical service, changing words from one language to another." (Seigel, 1995, p. 389), while the full participant model includes a) aspects of communication that will occur directly with the student, not merely between the teacher and student, b) guidance for the teacher when the learning is not occurring because of the student's unique needs, and c) translation of messages that have been internalized and then re-expressed by the interpreter, rather than superficially conveyed. This more humanistic model of the interpreter's role, if adopted in educational settings, will change the nature of the research questions to be asked about interpreters and their work.

Formulating the Research Question

The quantitative studies in the field of deaf education in the mainstream have failed to capture the experience of interpreting despite providing information about the language modality preferences and literacy development of deaf students in the educational setting. Therefore, the question, "What is the lived experience of the educational interpreter interpreting for a deaf student in an English literacy project?" was addressed through qualitative methods and inductive analysis.

Procedure

The bracketing process exposed presuppositions as they pertained to: a) the lived experiences of the phenomenon, b) exposure to the literature about the phenomenon, and c) beliefs about the research process itself. Relative to the bracketing of my presuppositions, other related issues were identified: 1) the interpreter might choose to use visual language to respond to questions so data was collected using videotape, 2) the interviewee might have presuppositions about the nature of the data anticipated so the orienting interview was allocated more than an hour to ensure clarity of purpose and procedure.

Participant Selection

The participating interpreter is identified here by his pseudonym "Jack" to ensure confidentiality. Jack was an educational interpreter selected for his experience with the phenomenon being researched and his ability to articulate clearly. He possessed interpreting experience not only when the modality has been predetermined by a third party as in the writing skills study, but also when the modality is determined by the interpreter and the client. Jack interpreted for a deaf student during a quantitative writing skills project and also interpreted for that same student in the mainstream educational setting outside of the project.

Data Collection

Jack participated in three stages of data collection: 1) an orienting interview, 2) the data collecting interview, and 3) the follow-up consultation during which Jack read the draft situated structural description developed from my analysis of his experiences. This third interview was a critical part of the investigative process when establishing credibility within qualitative research.

Data Analysis

In this phenomenological study, the data analysis was conducted to provide a response to the question, "What is the lived experience of interpreting for a deaf student in an English literacy project when the modality to be used has been pre-set?" To do so, a method reflecting the processes established by (Colaizzi 1978) and elaborated upon by Osborne (1990) was utilized. This involves identifying critical statements, paraphrasing the extracted statements (See Appendix B3), and then clustering the statements into cohesive first and second order themes (See Appendix

B4). From this process the phenomenon of the experiences is distilled from the original interview statements.

Results

The analysis of Jack's experience generated paraphrases, which were then grouped into first order themes. These themes were subsequently clustered into the more abstract thematically cohesive second order themes. Each cluster is labeled with a thematic statement reflecting the unifying thematic statement. Higher order abstractions resulting from a clustering of the second order themes were then identified (See Appendix B5).

Situated Structural Description

The interpreting phenomenon, for Jack, typically included the use of modality shifting in response to the student. That is to say, Jack shifted to and from primarily English Sign or primarily American Sign Language, supplementing communication with the alternate modality to clarify. Jack indicated that he shifted modalities in response to the student's body language or verbal cues, ranging from very subtle to blatant.

Jack strove continually to improve communication when interpreting. He used modality shifting to resolve difficulties in communicating with the student. Jack also supplemented communication by intervening with a clarification of the message being interpreted. In addition, Jack endeavoured to improve communication through augmentation of instruction during lessons, and clarification of instructions after the lessons.

From his experience using a pre-set modality, Jack was able to identify a number of sources of difficulty that confounded attempts to interpret the message successfully. First, Jack identified his difficulty interpreting the message successfully when confined to the use of a set modality. Secondly, Jack experienced a sense of feeling professionally restricted during the English writing skills study. He also experienced difficulty interpreting when restricted to ASL only. An additional area of difficulty for Jack was accepting his perceived failure to communicate successfully (in the context of a set modality). He also identified as an area of difficulty the task of conveying English literacy to a student who was from an ASL background.

When interpreting, Jack also experienced frustration. He identified his frustration with the restrictions on interpreting in a pre-set modality, with the limited strategies for fulfilling his normal job requirements under the study conditions. He was frustrated as well by his sense of failure to communicate. Another frustration for Jack was the use of project time trying to refocus

the student. Jack experienced feelings of frustration and anger with student. However, Jack indicated that the student-related frustration during the project was comparable to the frustration he felt with the student outside the project.

Jack's experience of interpreting involved his consideration of legitimate reasons for modality choices, including awareness of and respect for the student's preferred modality and commitment to the use of the student's preference when interpreting. At the same time, Jack would consider the objective of the lessons for which he would be interpreting, believing that Sign English is required for English language structure lessons. Despite this thought process, Jack accepted the criteria of using a single modality per session.

Jack also acknowledged that his modality preference was not fixed but in fact changed over time. Initially, Jack's preferred modality for interpreting was ASL. Later, that changed and he stated that his preference at the time of the interview was sign English.

Jack also gained new insights through the experience of interpreting in a pre-set modality. He identified aspects of the study that would be positive for *any* student coming into a mainstream setting. As well, Jack perceived that the literacy project could be useful in clarifying the student's English literacy skills and understanding of the structures, thereby providing a "strong base to go from through the high school years".

Jack identified mental costs associated with interpreting. He described the interpreting as mentally exhausting: "some days in the project ...I was fighting exhaustion ... mental fatigue more than anything."

During the process of interpreting, Jack often felt conflict. The conflict was experienced when the restricted modality and the benefits of using that modality were at odds. Jack stated that "I'm used to success ...so yeah, there are conflicting feelings when the message isn't getting across." Jack also felt conflict when the general role (interpreting to facilitate understanding) and the specific role during the project (interpreting without shifting modalities) were in conflict. Another type of conflict Jack experienced arose when there was "a conflict in what [modality] the professional experts are requesting and what the client prefers." Occasionally, Jack experienced conflict between his professional commitment to interpreting for the student and his desire not to work with that student at that specific time because of the frustrations identified earlier.

Another area that constitutes part of Jack's interpreting experience was Jack's processing of his feelings about interpreting. Jack indicated that he often questioned the source of his sense of having failed to communicate. He also indicated that one of his strategies for dealing with frustration was to immediately intervene in order to eliminate the source of the frustration, for

example, the student's lack of focus. Another way of processing his feelings was simply to delay his response to the frustration until the debriefing session after the lesson. He acknowledged that the student's state would affect the interpreting session. This recognition "doesn't negate the fact that [I was] frustrated by the whole process." Furthermore, the debriefing sessions didn't prevent feelings of anger or the conflict between personal feelings and professional judgment. However, Jack did report a sense of affirmation and relief when processing his feelings with the teacher. He was comforted by the knowledge that his best effort had been given. Jack experienced a release of feelings during the debriefing sessions.

Over time, Jack developed a mutually supportive relationship with the teacher. That is, his experience of interpreting while partnered with that teacher was very pleasant. He perceived the teacher as very understanding. During the course of the literacy project, Jack realized that the roles changed to reflect an acquired equality in their abilities to perceive the student's situation. For Jack, the relationship with the teacher was positive, characterized by their working together to achieve a common goal. Ultimately, the teacher was able to assist Jack with re-focusing the student to the goal of the session when needed.

Jack's appreciation of the interpersonal dimension of interpreting emerged as a recurring theme. For example, Jack's experience included his empathizing with the student. Another interpersonal aspect of the interpreting process was Jack's responsiveness to the student's situation and perspective.

Jack also identified external factors that influenced his interpreting. These external factors included: the student's situation and perspective, the student's focus and motivation, the perception that the teacher and he were engaged in a joint effort to achieve a common goal, the supportiveness of the teacher, and the cumulative influence of a difficult day on the interpreting during the study.

Higher Abstractions of Second Order Themes

The second order themes identified through inductive analysis were re-examined and clustered yet again as higher levels of abstraction emerged from the meanings underlying the data. In re-examining the themes arising from Jack's experience of interpreting, four higher abstractions were identified.

Firstly, Jack's experience included a higher theme of interpreting as a dynamic process. For Jack, the interpreting experience changed in relation to the ongoing modality shifting. Interpreting, for Jack, was an ongoing process of striving to improve communication, acknowledging and

responding to the difficulties interpreting the message successfully, and identifying the sources of frustration in interpreting that were to be overcome.

Secondly, Jack's experience included the theme of reflective self-analysis as part of interpreting. Jack's consideration of the legitimate reasons for modality choices was an aspect of the reflective process. As well, Jack's self-analysis revealed the changing nature of his modality preference over time. Furthermore, his reflecting brought him insights gained through the experience of interpreting in the pre-set modality.

Thirdly, Jack's experience was characterized by his identification of the psychological features of interpreting. This is not consistent with Communication or Mechanical Models of interpreting but is true to his experience. This theme incorporated the second order themes of experiencing conflict while interpreting, appreciating the interpersonal dimension during interpreting, his processing of feelings about the interpreting situation, the development of an emotional working relationship with the teacher, and the acknowledgment of the mental costs associated with interpreting.

Finally, the inductive analysis of Jack's experience of interpreting for a deaf student revealed that external factors influence the interpreting process and, hence, the experience. This again suggests that the Mechanical model was not actually in use; rather, an Interactive Model was being described. The implications and limitations of these thematic findings will be discussed in the next section of this paper.

Discussion

Thirteen second order themes characterized the participant's lived experience of interpreting through a pre-set modality. These themes are discussed in relation to the literature and to each other. It is important to note that, although the themes are discussed in isolation or in clusters, they are experienced not in isolation, but rather as part of a whole lived experience.

Interpreting as a Dynamic Process

The first of these findings was that interpreting, for Jack, is a dynamic process that fluctuates, changes, and evolves. The dynamics include aspects of Jack's experience such as modality shifting, and striving to improve communication while reducing frustration and inherent difficulties in the communicative process. This interactive perspective on interpreting is consistent with the full participant model of the interpreter summarized by Siegel (1995), or the Interactive

Model described by Stewart et al. (1998), and does not support the Mechanical Model posed by The Premier's Council on the Status of Persons with Disabilities (1994).

Exploring the interpreter's use of modality shifting in response to the student revealed that the process of shifting does not occur arbitrarily. On the contrary, modality shifting can be prompted by the perception that the students do not understand, "because they just kind of get this glassy-eyed look on their faces." Jack also acknowledged that the impetus for the modality shifting varies: "Sometimes it is blatant. Sometimes it's subtle. Sometimes they will ask you, 'What did you just say?'" Modality shifting was also reported by Torigoe, Takei, and Kimura (1995), as a part of the communicative repertoire of Japanese signers fluent in both the indigenous system of Okinawa and the formal Japanese Sign Language learned in schools, and by storytellers working with children (Nelson Lartz & Lestina, 1995). This supports the idea that modality shifting is part of a natural communication dyad, if not part of the interpreting process.

Jack experienced interpreting as a dynamic process that included his striving to improve communication as it occurred. This involved his being aware of the communicative effectiveness and responding to the student's verbal or nonverbal cues, and subsequently supplementing the information by shifting modalities between predominantly American Sign Language and Sign English to include features of the other modality. As well, clarifying information during or after the lessons being interpreted, and augmenting instructional information during the lessons, were strategies employed by Jack to improve communication. These strategies are consistent with some of the observed behaviours of signing deaf mothers reading stories to young children. Nelson Lartz and Lestina (1995) noted that mothers naturally clarified information and augmented story information when enhancing communication with their deaf or hard-of-hearing offspring. Another dynamic of interpreting that emerged from Jack's experience was difficulty interpreting the message successfully. Jack expressed a sense of being extremely limited while being restricted to one modality. Further, his perception that he was failing to communicate effectively was very difficult for him to accept. In addition, Jack stated that the student's background in ASL "made instructing in English literacy extremely hard." Yet, interpreting English writing skills lessons into ASL was not the solution. Jack recalled that "to think in ASL structure and take the [English] message and interpret it in ASL structure took longer to think through because ...more thought had to go into how I would structure the sentence."

A final dynamic in the interpreting process was Jack's processing of the various sources of frustration. These were recounted as including the feeling of being restricted to one modality, the limited strategies for communicating under those circumstances, and the resulting sense of failure.

In addition, Jack's frustration was found to sometimes stem from the student's lack of focus and the necessity of diverting instructional time to the task of refocusing the student. This source of influence on the interpreting process occurred during the writing skills project and in other situations in which Jack interpreted for that same student. Again, this is consistent with a "full participant" model (Seigel, 1995) or, perhaps, the Interpreting Process Model, which incorporates the management issues of monitoring the success of the communication for all participants (Colonorfios, 1992).

All of the fluctuating and dynamic aspects of the interpreting process are identified as key features of the lived experience of educational interpreting as related by the participant. The features are elucidated by Jack's description of their occurrence or non-occurrence within and outside the English writing skills project. They are consistent with the full participant model (Seigel, 1995) and the findings of studies involving other signers who take responsibility for monitoring communicative effectiveness, such as mothers (Nelson Lartz & Lestina, 1995) and teachers (Schick & Gale, 1995). In each of the communication dyads, the onus for monitoring, clarifying, and augmenting communication lies more clearly with the adult and less clearly with the child or student.

Reflective Self-analysis as Part of Interpreting

The second major theme that emerged during this research was that a significant part of the interpreter's experience occurs as a result of reflective self-analysis outside of the actual time spent interpreting. Second order themes that comprised this reflective cluster included the interpreter's active considering of legitimate reasons for modality choice, acknowledgment of the changing nature of modality preferences, and insights gained through the experience of interpreting, in the English writing skills project context. Jack's reflective consideration of legitimate reasons for modality choice certainly does not fit within the mechanical model of the interpreter as a mere tool through which communication passes (Stewart et al., 1998; Seigel, 1995; The Premier's Council on the Status of Person with Disabilities, 1994). However, it fits very well with the full participant model. Jack based his considerations of legitimacy for modality selection primarily on the student's preference, in keeping with AVLIC (Association of Visual Language Interpreters in Canada) code of ethics, reprinted in the Standards for Educational Interpreters (The Premier's Council on the Status of Person with Disabilities, 1994). However, Jack acknowledged that at times he would compromise this general rule:

If it [the client's preference] is ASL and you're asked to use English Sign Language to improve their English skills, then I can understand that.

Jack recognized that the student's preference might at times be in conflict with the professional's preference for sign English to support English writing skills lessons. In situations such as these, Jack indicated that his experiences would lead him to "augment with ASL if I had to, using mostly English Sign Language." That is to say, he would engage in modality shifting to address both needs (student preference and lesson objective).

Jack also reflected on his own changing modality preference. Initially his preference was determined by his training in ASL, but that preference changed as a result of his experience and the work requirement to use some form of Sign English. Jack made the distinction between selecting a preference and having a preference emerge over time as did his.

A third form of reflective self-analysis that emerged from Jack's data also occurred outside of the actual interpreting time and the English writing skills project. Jack gained a number of insights through his experience of interpreting. He believed that the writing skills project "would be *great* for any student coming into a mainstream setting." He also identified benefits of the project for staff in that implementation of the project, "would help our understanding of where [the students] are at with English literacy and their understanding of it and the structure which would give [us] a strong base to go from through the high school years."

Jack predicted that information from the writing skills project could be used to guide interventions and preparations for governmental achievement examinations. I had not anticipated that the interpreter would see this part of the prescriptive program planning for deaf students as part of his role and, in that sense, the distinction between presuppositions of interpreters as mechanical tools or full participants was again made relevant.

Psychological features of interpreting

The third major theme was that Jack's lived experience of interpreting included his awareness of the psychological aspects of interpreting as a process and as a role. He was aware of: a) feelings of conflict while interpreting, b) his appreciation of the interpersonal dimension during interpreting, c) the need to process his feelings about interpreting, and d) the importance of the development of an emotional relationship, or bond, with the teacher. Using the Siegel (1995) distinction of interpreter as mechanical tool or full participant, the extensive reports provided by Jack regarding his involvement with the interpreting act on a psychological level, reveal the

mechanical model to be insufficient to explain the lived experience. Jack struggled with the conflict arising from the imposition of a restricted modality, and from the discord between the modality preference of the student and the demands of the lessons. Jack felt that he had been put in a position of conflict between his professional responsibilities of facilitating communication and the specific responsibility within the writing skills project: use of the assigned modality.

Jack described his psychological experience as characterized by appreciation as well conflict. He was able to empathize with the student in the lessons. Further, he was psychologically flexible, allowing himself to be responsive to the student's day-to-day situation and perspective on learning. This reflects an interactive aspect of interpreting that the mechanical model does not represent.

Jack identified the importance of processing his feelings about interpreting. This was achieved, not so much during the writing skills sessions as after the interpreting. These discussions occurred between the teacher and Jack spontaneously at first. The debriefings became a critical part of the experience, as "it was after, in the debriefing, that [I] dealt with the frustrations." This provided a time for feedback on progress, and affirmation of feelings about the effort and progress to date.

Furthermore, debriefing was used to relieve feelings of anger or frustration, and to do so in a professional manner without imposing personal feelings onto the professional setting of the classroom. The need for this debriefing time will have implications for program planning, staff time allocations and hiring practices. Further investigation into the psychological aspects of interpreting should address this issue as well as the next two identified themes.

Jack's experience was influenced by his sense of developing an emotional relationship, or bond, with the teacher. This allowed them to feel that they were engaged in a joint effort to achieve a common goal. It also served to reduce the sense of isolation that might otherwise arise when the interpreter is perceived as a mechanical tool. The teacher involved in this project was characterized by Jack as very understanding and supportive. Whereas, initially, she entered the project as the new or unfamiliar person in the communication triad, she became familiar with both the student and the interpreter. She became as adept as Jack at "reading" the student's mood. This shared perspective formed the basis of their professional bond.

The final psychological feature of the interpreting phenomenon was the associated mental cost of interpreting. Fatigue and mental exhaustion were depicted as aspects of the interpreting phenomenon, contributing to the general psychological quality of interpreting. Jack expressed this best when he said "there was a point ...where I was fighting exhaustion [and] mental fatigue more

than anything." This is consistent with the acknowledgment in the recommendation of The Premier's Council on the Status of Persons with Disabilities (1994) that "continuous interpreting over long periods of time increase fatigue with a corresponding decrease in effectiveness." (p. 12).

External Factors Influencing the Interpreting Process

The fourth higher order theme emerging from this research acknowledged that Jack's experience included the perception that external factors influenced the interpreting process. This is consistent with an Interactive model of interpreting. Factors that influenced the lived experience of the interpreting phenomenon included: a) a positive relationship with the teacher and student, b) any assistance from the teacher, and c) the impact of frustrations and fatigue from outside the project times on the working conditions within the project times. Again, this attests to the efficacy of a "full participant" model of interpreters and does not support the mechanical model in which outside factors would not be allowed to have an impact (Siegel, 1995).

The debate in deaf education over the preferred modality for communication (ASL versus some form of manually coded English) would seem to be a dubious debate if the findings of this research are to be accepted. Having to use one modality or the other only in this study, was experienced by the interpreter as frustrating, exhausting, and was associated with perceptions of failure to communicate successfully. On the other hand, the opportunity to shift between modalities was seen to be effective in a story-telling study undertaken by Schick and Gale (1995). Further investigations of modality usage might be useful in resolving the educational debate and shifting researchers' focus to new areas of investigation.

Summary of the findings

Educational interpreting in a pre-set modality was found to be a dynamic process involving reflective self-analysis on the part of the interpreter. The phenomenon is characterized by specific psychological features and is subject to the influence of external factors. None of these findings are consistent with the mechanical model of interpreting, but, rather, suggest that the interpreter's experience is consistent with the full participant model of interpreting. The characterization of the educational interpreter as a full participant implies that the interpreter as a professional exercises judgments about ways and means to ensure the efficacy of the interpreting for the client. When a pre-set modality is enforced, the interpreter may feel that he is being asked to perform his job "with one hand tied behind his back". If this finding is upheld by future investigations with other interpreters, the rigid concept of pre-selecting a modality (American Sign Language or sign

English) may be a moot point in applied settings. Parents and educators dedicated to one modality only will need to revisit the reality of such a choice as it applies to service delivery.

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CHAPTER FIVE

Overview

The purpose of this research was to investigate the influence of interpreting modality on the writing skill development of a deaf student and on the interpreter's lived experience. To this end, the literature on deafness and writing skills was reviewed. Out of the literature emerged the question: Can the mode of interpreting be used as a teaching strategy to foster writing skill development? A quantitative research project was undertaken to assess the relative efficacy of interpretation through American Sign Language (ASL) and Manually Coded English (MCE) in relation to a mainstream deaf student's mastery of syntactic and semantic features of English writing. The quantitative findings suggested that the modality of interpretation did influence the emergence of writing skills in the case of one deaf student. However, the collateral data collected from the signing participants indicated that the more efficacious modality was not their preferred modality. Hence a qualitative research question emerged: What is the interpreter's lived experience of using a pre-set modality for interpreting English writing skills instruction?

The findings of the literature review, the quantitative study and the qualitative study are summarized in this chapter. As well, implications of the findings are identified for: a) researchers, b) program designers, and c) professionals practicing in the area of deafness.

Summary of the Findings

The literature documenting the writing of deaf students revealed that investigations have paralleled research in writing generally. That is, the shift from writing as a product to writing as a process has occurred in general education literature and in deafness studies.

Based upon a reading of the literature, one can say that deaf students, on average, do not achieve the level of competence that their hearing peers achieve when one measures English writing skills. The deaf students' writing product is found to be inferior to that of hearing students (Paul, 1998; Streng, Kretschmer, & Kretschmer, 1978). Teachers of the deaf and hard-of-hearing have had access to this information for at least three decades. During that time, efforts to teach "product" have resulted in production of materials such as the Apple Tree writing series (Caniglia, Cole, Krohn, & Rice, 1975). Despite approaches directed at correcting the 'product' errors, improvement has not been documented for deaf students' writing. Process oriented writing interventions (Schneiderman & Wood, 1996; Satterfield & Powers, 1996) may have helped re-focus teachers' attention to writing for a purpose, and attending to the reader as a part of the writing process. However, the positive results reported have not clearly defined "improved"

writing, nor have they produced results indicating that deaf students learn to write at the level of competence achieved by hearing students. Process oriented instructional methods have not proven sufficient to address the literacy problem.

The lack of progress suggests that researchers shift their focus to the underlying language issues that deaf students must overcome in order to be fluent writers of English. One can hypothesize that for deaf students to be fluent in English, they would need a well-developed first language. This would require visual access to a complete language. Two trends developed: visual access to English through the contrived sign systems generically known as MCE (Signed English, SEE I or SEE II) and visual access through ASL. The Total Communication programs and, later, the Bilingual-Bicultural approach developed out of the attempts to provide students with a well-developed first language. It was posited that students needed a first language in which to *think* so that teaching and writing could occur without restrictions imposed by limited language. However, the question remained as to which modality (ASL or sign English) would foster a first language that could support the development of English writing skills.

The quantitative study into the relative efficacy of ASL and MCE interpretation indicated that MCE, generally, resulted in a faster rate of improvement in this deaf student's English writing skills. On the targets for which ASL produced the faster rate of improvement, the ASL included a high frequency of fingerspelling. As fingerspelling is representation of English words, one could argue that the ASL treatment conditions that succeeded were, in fact, very English-like, and consistent with the overall findings that support the use of an MCE modality.

The collateral information collected from the signing participants in the quantitative study revealed that the student preferred interpretation in ASL and the interpreter preferred to interpret using ASL. This leads to the quandary: How would the signing participants feel about adhering to a pre-set, seemingly "better" modality when their personal and professional preferences are for a different modality. The findings of the qualitative research conducted with the interpreter revealed that the interpreter was frustrated with having to adhere to a pre-set modality, and being prohibited from modality shifting. The findings also supported the role of the educational interpreter as consistent with an interactive model rather than the traditional mechanical model of an interpreter's functioning.

Implications

The results of the literature review, quantitative research and qualitative research have generated a number of implications for researchers, program designers, and professionals.

The implications for researchers include the need to: 1) replicate this study with other students, other interpreters, and other teaching targets, 2) examine the possible relationships between levels of receptive competency in ASL and MCE and rate of improvement to mastery of English targets, 3) investigate the issue of first language dominance and learning through various modalities, 4) delineate the possible interaction of the student's presenting level of writing competency and rate of improvement, and 5) investigate improvement when student and interpreter are given the choice of modality.

The implications for program designers include the need to: 1) develop guidelines for interpreters regarding the use of modality shifting, 2) examine the role and importance of fingerspelling in a child's emerging literacy, 3) review bilingual instruction and the levels of competency needed before students can be expected to translate between languages.

The implications for professionals include the need to: 1) plan for debriefing between the interpreter and the teacher, 2) minimize the impact of the psychological stresses of interpreting upon the interpreter, and 3) acknowledge the dynamic process of educational interpreting as an interactive model of interpreting. It would also be of value to ensure that English Language Arts teachers in the main stream receive inservicing on the challenges of and strategies for teaching writing skills to their deaf mainstreamed students.

Concluding Statement

The intention of this researcher was to offer objective evidence to an often emotional debate surrounding the use of ASL or MCE by interpreters working with deaf students in the mainstream setting. What the quantitative study *did* clearly achieve was the development of a methodology and a first set of results indicating that MCE was the modality that supported English writing skills for the subject in the context of a direct instruction in written English. What the qualitative study revealed was that educational interpreting is a dynamic process consistent with an interactive model that brings with it implications for professionals and program planners.

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APPENDICES

APPENDIX A: QUANTITATIVE RESEARCH

A1: PARTICIPATION CONSENT FORMS

Form	1:	School Jurisdiction Permission Letter
Form	2:	Student Consent
Form	3:	Guardian Consent
Form	4:	Educational Interpreter Consent
Form	5:	Teacher Consent Form

Form 1: School Jurisdiction Permission Letter

Date

«contact first name» «contact surname»

«title»

«jurisdiction»

«address»

«town», Alberta

«postal code»

Dear «contact first name» «contact surname»:

re: doctoral research proposal

(Ph.D. in Special Education)

Your school jurisdiction's cooperation and assistance are sought in conjunction with a research project examining the influence of mode of sign language interpretation on the acquisition of English writing skills by Deaf students in mainstream programs.

Initially, your assistance would be required in identifying potential subjects in integrated placements within your school jurisdiction. A potential subject is that Deaf student who is:

- a. integrated in hearing classes (not segregated programs for the Deaf and/or Hard-of-hearing)
- b. designated as a secondary or adult student
- c. known or perceived to have an intelligence quotient measured on a standardized non-verbal instrument of Low Average or higher. If previous psychometric assessment data are unavailable for a potential subject, the researcher will secure such data with permission from the parents or guardians or adult subject.
- d. dependent on non-oral forms of communication

e. familiar with American Sign Language (ASL) and/or sign English (SE). Potential subjects will be screened for minimum competencies in ASL and SE.

Potential subjects and their parents or guardians (where appropriate) will be contacted by mail and provided information about the proposed study. Should the adult subject or the adolescent subject and his/her parents agree to participate in the English Writing Skills Instruction study, access to the student's file will be requested to secure past psychometric results.

The student would then be screened for ASL and SE minimum competencies. The screening procedures involves the viewing of videotapes that present information in ASL and in SE. Subsequent to each videotape the student would be asked to respond to recall questions in order to demonstrate his/her receptive comprehension of the signed message.

If a student is found to be a potential subject for the Writing Skills Project, the participation of the teacher and educational interpreter working with that student would be sought. Finally, access to the student, teacher and interpreter during or immediately after school hours will be arranged for a period of four to six weeks.

If you have any questions regarding the proposed study, I would be pleased to address them. I appreciate your cooperation and contribution to research in this area.

Should you be willing to participate in this research, please complete and return the attached consent form in the self-addressed stamped envelope provided.

Sincerely,

P. Hill
Ph.D. (cand.)
Dept. of Ed. Psychology
University of Alberta
Edmonton, Alberta, T6G 2G5

Dr. Michael Rodda
Supervisor
Dept. of Ed. Psychology
University of Alberta
Edmonton, Alberta, T6G 2G5

ph. 436-6463

ph. 492-5245

Consent to Participate in Research: School Jurisdiction Form

< _____ > agrees to participate in the doctoral research undertaken by Patti Hill, Ph.D. (Special Education) candidate in the Department of Educational Psychology, University of Alberta, Edmonton, Canada. I understand that the information obtained from school files will be used only for the purposes of this study, and will only be viewed by the principal researcher, and members of the dissertation committee.

Name: _____

Date: _____

Address: _____

One copy to be retained for your records.

Consent to Participate in Research: School Jurisdiction Form

< _____ > agrees to participate in the doctoral research undertaken by Patti Hill, Ph.D. (Special Education) candidate in the Department of Educational Psychology, University of Alberta, Edmonton, Canada. I understand that the information obtained from school files will be used only for the purposes of this study, and will only be viewed by the principal researcher, and members of the dissertation committee.

Name: _____

Date: _____

Address: _____

One copy to be retained for your records.

Identified potential subjects:

Name: _____

Parents: _____

Address: _____

Phone: _____ (home) _____ (work)

School: _____

Principal: _____

Name: _____

Parents: _____

Address: _____

Phone: _____ (home) _____ (work)

School: _____

Principal: _____

Form 2: Student Consent

Date

Student

Address

Town, Province

Postal Code

Dear Student:

This is a letter asking for your cooperation in a research project that I am doing as part of my Ph.D. university studies. The research project tries to help students improve their English Writing Skills. Some of the time the lessons are interpreted using American Sign Language (ASL) and other times the lessons are taught using sign English (SE). The study is investigating the difference in students' English writing when the two different methods (ASL & SE) are used.

Please discuss this project with your parents and then decide if you would like to participate. If you have any questions, please contact me at 464-5809 through the Message Relay Center. If you would like to participate, please complete the form below and mail it to me. A stamped envelope with my address is included for you to use.

Thank you for your help and cooperation.

Sincerely,

Patti Hill

Ph.D. Student, University of Alberta

Department of Educational Psychology

Consent Form

(Please return to P. Hill in the envelope provided)

I _____

(name of student)

consent to participate in the English Writing Skills Instruction Program.

I understand that the program will be four to six weeks long.

I understand that I may withdraw from (quit) the program at any time.

I understand that my work will be kept private and confidential.

I understand that the information about my work will be reported so that my identity remains anonymous.

I understand that the sessions will be videotaped but my identity will be kept anonymous.

(signature of student)

(date)

(signature of witness)

(date)

Form 3: Guardian Consent

Date

Parents

Address

Town, Province

Postal Code

Dear Mr. & Mrs. Parents:

I am a Graduate Student at the University of Alberta where I am completing a doctoral study of the writing skills of deaf students. I am particularly interested in trying to help deaf students improve their written English. As well, I am interested in the effect of American Sign Language (ASL) interpretation or sign English (SE) interpretation for school lessons.

Therefore, I would like to ask for the cooperation and participation of your son/daughter in researching the benefits of both ways of interpreting.

Your son/daughter would be asked to:

1. answer questions about short stories that are presented in ASL;
2. answer questions about short stories that are presented in SE; and
3. attend 40 minute English Writing Skills sessions approximately three times a week for four to six weeks depending on the rate of progress.

The objective of the study is to improve the writing skills of your son/daughter. Any general information gained from this study will be shared with other educators, but at all times the identity of the student will be kept confidential. Please discuss this request for your cooperation with your son/daughter.

B

If you have any questions regarding the proposed study, I would be pleased to address them. Please feel free to contact me at 464-5809 to discuss this further.

If you are prepared to have your son/daughter participate in the English Writing Skills Project, please complete the attached consent form and return it to me by April 14, 1994. A self-addressed stamped envelope is provided for your use.

I appreciate your cooperation and participation.
Sincerely,

P. Hill

I give permission for _____ (child's name) to
participate in the videotaped research study -- English Writing Skill. I understand that these
recordings will be used only for the purposes of this study and will only be viewed by the
principal researcher, trained research assistants and the members of the dissertation committee.

Name: _____

Date: _____

Address: _____

Witnessed by: _____

Date: _____

Form 4: Educational Interpreter Consent

Date

School

Town, Province

Postal Code

Dear Educational Interpreter:

I am a graduate student at the University of Alberta where I am completing a doctoral study of the writing skills of deaf students. I am particularly interested in helping deaf students improve their written English. As well, I am interested in the effect of American Sign Language (ASL) interpretation or sign English (SE) interpretation for school lessons.

Therefore, I would like to ask for your cooperation and participation in researching the benefits of both modes (ASL and SE) of interpreting.

You would be asked to:

- a. interpret English Writing Skills classes,
- b. use ASL for half of the classes and SE for the alternate classes,
- c. to participate in the program for 40 minutes daily for four to six weeks.

All information regarding your identity would be kept **confidential** in all documentation of this research project. Furthermore, in all videotapes of the interpreted classes made for subsequent analyses, the identity of the participants videotaped will be kept confidential.

The objective of the study is to improve the writing skills of the deaf student. Any information gained from this study will be shared with others working in deaf education, but at all times the identity of the research participants will be kept confidential.

If you have any questions regarding the proposed study, I would be pleased to address them. Please feel free to contact me at 464-5809 to discuss this further.

If you are prepared to participate in the English Writing Skills Project, please complete the attached consent form and return it to me by April 14, 1994. A self-addressed stamped envelope is provided for your use.

I appreciate your cooperation and participation.

Sincerely,

P. Hill

Ph.D. Student

Dept. of Educational Psychology, University of Alberta

T6G 2G5

Consent Form

I _____ consent to participate in the
(name of educational interpreter)
English Writing Skills Instruction Program.

I agree that my participation will consist of interpreting English Writing Skill Classes in
American Sign Language and Manually Coded English. ____ (yes) ____ (no)

I understand and agree that my participation in the program will span approximately four to
six weeks. ____ (yes) ____ (no)

I understand and agree that I may withdraw consent for my participation in the program at
any time. ____ (yes) ____ (no)

I understand and agree that all information regarding my identity will be kept **confidential**
in all documentation of this research project. ____ (yes) ____ (no)

(signature of educational interpreter)

(signature of witness)

(date)

(date)

Form 5: Teacher Consent Form

Date

English Department

School

Town, Province

Postal Code

Dear English Instructor:

I am a Graduate Student at the University of Alberta where I am completing a doctoral study of the writing skills of deaf students. I am particularly interested in trying to help deaf students improve their written English. As well, I am interested in the effect of American Sign Language (ASL) interpretation or sign English (sE) interpretation for school lessons.

Therefore, I would like to ask for your cooperation and participation in researching the benefits of both ways of interpreting.

You would be asked to:

- a. teach predetermined English Writing Skills,
- b. use provided outline lesson plans,
- c. to participate in the program for 40 minutes daily for approximately four to six weeks.

All information regarding your identity would be kept **confidential** in all documentation of this research project. Furthermore, in all videotapes of the interpretation session made for subsequent analyses the identity of the participants videotaped will be kept confidential.

The objective of the study is to improve the writing skills of the deaf student. Any information gained from this study will be shared with other educators, but at all times the identity of the research participants will be kept confidential.

If you have any questions regarding the proposed study, I would be pleased to address them. Please feel free to contact me at 436-6463 to discuss this further.

If you are prepared to participate in the English Writing Skills Project, please complete the attached consent form and return it to me by April 14, 1994. A self-addressed stamped envelope is provided for your use.

I appreciate your cooperation and participation.

Sincerely,

P. Hill

Ph.D. Student

Dept. of Educational Psychology, University of Alberta

T6G 2G5

Teacher Volunteer Consent Form

I _____ consent to participate in the
(name of teacher)

English Writing Skills Instruction for Deaf Students Program.

I agree that my participation will consist of teaching predetermined English Writing Skills.

____ (yes) ____ (no)

I understand and agree that outline lesson plans will be provided for my use.

____ (yes) ____ (no)

I understand and agree that my participation in the program will span three to six weeks.

____ (yes) ____ (no)

I understand and agree that I may withdraw consent for my participation in the program at any time.

____ (yes) ____ (no)

I understand and agree that all information regarding my identity will be kept confidential in all documentation of this research project.

____ (yes) ____ (no)

I understand and agree that the program implementation will be videotaped for later analysis, but that the identity of the participants videotaped will be kept confidential.

____ (yes) ____ (no)

(signature of teacher)

(date)

(signature of witness)

(date)

A2: METHODS AND PROCEDURES

This appendix expands upon the study's (a) research design, (b) subject selection, (c) instruments and measures used, (d) reliability, (e) internal and external validity provisions, and (f) data collection and data analysis.

Research Design

This research into the efficacy of two interpretation modalities during the written English instruction of a non-oral, prelingually, severely to profoundly deaf adolescent student in an integrated setting utilized a single subject design. Through alternating treatments, the relative efficacy of ASL and MCE modalities of interpreting was studied when syntactic and semantic aspects of English writing skills were to be mastered by the student. The analysis of results from a single subject was achieved using visual inspection and within subject comparison analysis.

Attempts to establish a critical level of experimental control were implemented through (a) subject selection criteria specifying for no other handicapping conditions or known environmental or social confounding factors, (b) video-taping the interpretation of intervention to improve reliability of ratings, (c) quantifying the ratings of interpretation consistency, and (d) establishing the subject's pre-intervention skill levels in written English and receptive competence in ASL and MCE.

Subject selection

Initially, a potential subject was classified as mainstreamed if the student spent 60 percent or more of his or her school hours in classes designed for and attended by hearing students. Such a student was eligible for the study if he or she met the subject selection criteria, and if the parties involved consented to participation in the study. The parties from whom consent to participate were required included the school jurisdiction, the parent(s) or guardians (where the student was under 18 years of age), the student, the teacher, and the educational interpreter working with the student.

Subject Selection Procedures

Voluntary participation in the study was sought from deaf adolescents and adults mainstreamed into hearing schools or post secondary institutions offering secondary course work who had the support of educational interpreters. Participation was secured first from the school jurisdictions or institutions, then the parents where applicable, the student, the teacher and the educational interpreter working with the student. As well, permission to release information was secured from the parents or adult students, and permission to videotape sessions secured from the student and the educational interpreter.

Subject Selection Criteria

Subjects eligible for the study were:

- a. enrolled in a hearing school or postsecondary institution offering secondary schooling;
- b. designated as a grade 7, 8, 10, or 11 student; or post secondary student;
- c. assessed as having an intelligence quotient measured on a standardized non-verbal instrument of Low Average or higher;
- d. screened for ASL and MCE receptive comprehension;
- e. profoundly deaf (Pure Tone Average across 500, 1000, and 2000 Hz of 70 dB or more in the better ear) of onset prior to 18 months;
- f. dependent upon sign language or a sign system as their primary means of communication;
- g. not known to have other handicapping conditions;
- and
- h. the only deaf child of hearing parents

The specified selection criteria were employed to eliminate confounding factors. Each selection criterion was deemed relevant to the study in the manner outlined.

Enrolled in a mainstream setting - Instruction through interpretation is most commonly used in mainstream settings and the results of this study might assist in programming decisions for mainstreamed students. Therefore, students selected for participation in this study should be representative of the population to which the results might be generalized (Construct Validity).

Designated as a grade 7, 8, 10, or 11 student or post-secondary student studying secondary level courses - Students in grades nine and twelve were excluded to prevent any serious

interference in their program of studies in semesters in which governmental achievement examinations were required of the students (ethical considerations). Student at a minimum of the seventh grade were selected as the literature suggests that by adolescence, the average written language competence of deaf students as measured on standardized tests was already four years or more delayed. Implementing the intervention sessions for such students should not interfere with an existing program of intervention creating a cognitive demand with which younger students could less well cope (subject welfare). Furthermore, the rate of skill acquisition for selected targets appropriate to hearing students up to four years younger than the deaf subjects would be more probably dependent upon the intervention than any age-appropriate skills being taught simultaneously in the subject's other junior high or senior high classes

Assessed as having an intelligence quotient measured on a standardized non-verbal instrument of Low Average or higher - this criterion allowed for some degree of control over the relationship between the independent variable (mode of interpretation) and the dependent variable (change in writing skills).

Screening for ASL and MCE receptive comprehension - use this screening criterion ensured that the student was able to access the intervention and that changes in writing skill were developing in association with the accessed intervention (Construct validity) Profoundly deaf (Pure Tone Average across 500, 1000, and 2000 Hz of 70 dB or more in the better ear) - this criterion was included to eliminate the possibility that the subject had direct access to the teacher's auditory instruction without the interpretation modality being employed and the onset prior to 18 months of age was employed to provide a limited English language aural experience.

Dependent on sign language or a sign system as the primary means of communication - the specification that the student must use sign as the primary means of communication eliminated those potential subjects for whom lipreading of the teacher or an oral interpreter would be the primary receptive modality in which instance the distinction of ASL or MCE interpretation was not applicable.

Not known to have other handicapping conditions - this criterion eliminated confounding factors that other conditions such as a learning disability or vision loss could contribute to the results.

The only deaf child of hearing parents - this criterion was included to eliminate variations in home linguistic environment that would arise should the subject have a deaf sibling or deaf

parents with whom either ASL or MCE was used as a primary means of communication, thereby providing a disproportionate historical exposure to one of the two intervention modalities.

Provisions for continuance or termination of the project were made as follows:

Should a subject or the parents or guardians of the subject under 18 years of age request the student's withdrawal from the study, the intervention would be discontinued immediately upon receiving this request in writing.

Should a subject become ill during the study, resulting in the postponement of intervention sessions, the intervention shall be re-initiated upon the subject's return to school with new targets having been selected if the interruption in instruction was of more than one week. Should the illness prevent the student's return to the study for more than four weeks, the subject would be asked to withdraw voluntarily from the study. Should the subject decline to do so, the intervention shall be continued for the student's benefit.

Should the data collected with reference to a subject be disqualified from inclusion in the study, the student shall be eligible to continue to receive intervention until criteria were met for the targets, or until two weeks of intervention have been completed, whichever comes first.

Should a party other than the subject and the researcher conduct, simultaneous to this intervention with the student, other intervention designed to improve the subject's English writing skills targeted by this intervention, the results would be considered to be invalidated and eliminated from the study. Despite this, the student shall remain eligible to continue to receive intervention until criteria were met for the targets, or until three weeks of intervention have been completed, whichever comes first.

Participant Description

The subject that participated in the study, having met all the subject selection criteria, was a grade eleven student in his fourth year of mainstream education. His deafness had been identified at birth. His family had chosen to use Signed English with him from the time of his early childhood intervention, but reported that while the mother continued to use a pidgin sign with him, his father communicated with him through writing.

The teacher in the study was an experienced teacher of English Language Arts who holds a graduate degree in education specializing in reading instruction. She conducted the lesson according to the lesson format provided by this researcher.

The interpreter had been working in that role in the educational setting for three years, and was in his second year of employment working with this particular student.

Instruments

The Measures

The following standardized and non-standardized measures were used to collect data:

- a. Test of Nonverbal Intelligence; (Form A or B) or equivalent measure
- b. Pure Tone Audiometric Testing
- c. American Sign Language Receptive Competence Screening; Protocol (Test of Information Recall)
- d. Manually Coded English Receptive Competence Screening; Protocol (Test of Information Recall)
- e. Test of Written Language - Second Edition; (TOWL-2) Form A or B
- f. Writing samples
- g. Personal and family background interview; regarding the subject's:
 - i. date of birth
 - ii. gender
 - iii. current grade placement
 - iv. years of schooling
 - v. years of mainstreaming
 - vi. early intervention
 - vii. use of home captioning decoder
 - viii. legal relationship to guardian(s) / parent(s)
 - ix. family perceptions of their own socio-economic status
 - x. parental use of a sign language or sign system; or neither

The student's cognitive functioning was assessed using the Test of Nonverbal Intelligence (TONI).

Each candidate for the project was asked to supply pure tone audiometric test results indicating unaided hearing thresholds. The test results were accepted as recent if they have been obtained in the past twelve months or less.

Each potential subject's American Sign Language receptive competence was assessed using the video-taped version of the Test of Information Recall stimulus passages and written response sheets. The ASL stimulus passages were presented to the subject and comprehension determined by the subject's ability to select the correct response to multiple choice questions of recall. The subject's number of questions answered correctly was converted to a percentage and was used as a measure of receptive ASL competence.

The student's ability to comprehend passages presented through interpretation in the Manually Coded English modality was screened using the video-taped version of the Test of Information Recall stimulus passages and written response sheets. The signed English stimulus passages were presented to the subject and comprehension determined by the subject's ability to select the correct response to multiple choice questions of recall. The subject's number of questions answered correctly was converted to a percentage and was used as a measure of receptive signed English competence.

The potential subjects completed Form A or Form B of the Test of Written Language - Second Edition (TOWL-2) as a pre-test. The results were used to select targets for instruction during the intervention sessions. As well, the spontaneous writing sample collected as part of the TOWL-2 was analyzed to determine syntactic and semantic targets for intervention.

Writing samples responses were collected from the subject in the project at the end of every fifth intervention session. The subject was asked to write for minimum of five minutes on a suggested topic or a topic of his/her choice. These writing samples were analyzed for percentage correct usage of the written language targets.

In addition information about each student and his/her home environment was collected through student and parent(s) / guardian questionnaires. Information from school records, interviews or observation were utilized in the collection of the following data:

- i. subject's date of birth - data to be used for descriptive purposes and possibly for the grouping of subjects should replication studies be undertaken.
- ii. gender - data to be used for descriptive purposes and possibly for the grouping of subjects should replication studies be undertaken.

iii. current grade placement - data to be used for descriptive purposes and possibly for the grouping of subjects should replication studies be undertaken.

iv. years of schooling - data to be used for descriptive purposes and possibly for the grouping of subjects should replication studies be undertaken.

v. years of mainstreaming - data to be used for descriptive purposes and possibly for the grouping of subjects should replication studies be undertaken.

vi. early intervention - data to be used for descriptive purposes and possibly for the grouping of subjects should replication studies be undertaken.

vii. use of home captioning decoder - data to be used for descriptive purposes and as a contributing factor in rate of skill acquisition.

viii. parental use of a sign language or sign system or neither data to be used for descriptive purposes and possibly for the grouping of subjects should replication studies be undertaken and as a contributing factor in rate of skill acquisition.

Interpretation Consistency Measure

For interpretation used in the study, the following measures were employed to rate videotaped samples of interpreting provided during the intervention:

- a. American Sign Language Consistency of Interpretation Ratings
- b. Manually Coded English Consistency of Interpretation Ratings

Ratings of the consistency of the interpretation were determined using videotaped samples of 20% of the treatment sessions. The ASL interpretations were rated by two judges fluent in sign. The number of classifiers, initialized signs, fingerspellings, facial PA signs, directional signs, and instances of ASL violations were noted. On the basis of upon these criteria, the raters designated the interpretation as predominantly ASL or not predominantly ASL. The MCE interpretations were also rated. The number of English morpheme markers, fingerspellings, articles, be verbs, initialized signs and instances of MCE violations or omissions were noted. Based upon these criteria, the raters designated the interpretation as predominantly MCE or not predominantly MCE.

Data were analyzed to determine any correlations between acquisition of English Writing Skills competency, and rating of the interpretation modality.

The participating educational interpreter was instructed regarding the role and responsibilities of the educational interpreter within the framework of the study, and expressly, the intervention sessions and intervention phase.

Instruments

The Test of Written Language - Second Edition (TOWL-2); is a standardized test available in two equivalent forms designed to assess a subject's written language competence in spelling, vocabulary, punctuation, capitalization, style, logical sentences, thematic maturity, syntactic maturity, contextual spelling, contextual style, and contextual maturity.

The Test of Nonverbal Intelligence (TONI) is a standardized test available in two equivalent forms designed to assess a subject's cognitive abilities using a nonverbal mode of administration, and nonverbal response pattern. Deaf student's performance on this test has been documented for both Form A and Form B of the test.

The ASL /MCE Receptive Competency Information Recall procedures were designed to assess the accuracy of the information a viewer recalls from presentation of information using American Sign Language or using signed English. The Information Recall (1987) video-tape stimuli were produced by the Instructional Technology Centre for use in establishing subjects' comprehension of information presented in three modes: (a) Total Communication (Manually Coded English), (b) Oral Communication, and (c) Manual Communication (American Sign Language). Only Tapes One and Three were administered, as the oral condition was not being investigated within the limitations of this research.

Purpose of instrument use

The Test of Nonverbal Intelligence was selected to provide descriptive data regarding the student's cognitive functioning, and as a screening device to ensure that instruction in written English skills was appropriate to offer to the subject being selected for participation in the study.

The Test of Written Language - Second Edition was being used to provide baseline data on the subject's spontaneous and elicited use of specific semantic and syntactic language conventions.

The Information Recall of ASL and MCE presentations instrument was used to ensure that the student has sufficient ASL and MCE receptive communicative competence to be able to benefit from the intervention being presented through interpretation in those modalities.

Instrument Validity

The Test of Nonverbal Intelligence (Brown, Sherbenou, & Johnsen, 1982) was evaluated as having the following validity ratings:

a. Concurrent validity - The TONI has been correlated to the Raven's (1983), Progressive Matrices, the Leiter International Performance Scale (1948), the Wechsler Intelligence Scale for Children - Revised (WISC-R) (Wechsler, 1974), the Otis-Lennon Mental Ability Test (Otis & Lennon, 1970), the Iowa Tests of Basic Skills (ITBS) (Lindquist & Hieronymus, 1970), the SRA Achievement Series (Naslund, Thorpe, & Lefever, 1978), and the Stanford Achievement Test (SAT) (Madden & Gardner, 1972). For Deaf subjects (mean age = 16.1) the correlations with the Progressive Matrices were calculated as .92 for Form A and .92 for Form B. For a second sample of Deaf subjects (mean age = 17 years; 9 months) the correlations with the Leiter were .89 for Form A and .83 for Form B.

b. Construct Validity - in addition to the concurrent validity, the TONI was found to have construct validity in measuring the construct of intelligence. This was evaluated by reviewing the raw scores, resulting in the finding that the scores increased with age until the onset of adulthood, then plateaued, and eventually began to decline among subjects older than mid 20s. This pattern was consistent with the construct of intelligence purported by Wechsler (1958) and Spearman (1923).

As well, the TONI was evaluated as having diagnostic validity for the construct being measured. When used for subjects known to vary in intelligence, the t-tests between matched samples provided diagnostic differences, using Form A and Form B, significant beyond the .001 level.

Reliability Estimates

The Test of Nonverbal Intelligence (Brown, Sherbenou, & Johnsen, 1982) was evaluated as having the following reliability ratings:

a. Internal Consistency Reliability- the Alpha coefficients for a sample (N=100) of 13 - 14 year old subjects was calculated to be .88 for Form A, and .90 for Form B of the test instrument.

b. Standard Error of Measurement- using a Kuder-Richardson 21 coefficient and Standard Error of Measurement (SEm) the raw scores and the TONI quotients were evaluated. Using Form A for 12; 6-14; 11 year old subjects, the evaluation results were $r=.8$, raw score SEm=4 and TONI Quotient SEm=7; for 15;0-18; 5 year old subjects, the results were $r=.9$, raw score SEm=3 and TONI Quotient SEm=5. Using the TONI Form B $r=.8$, raw score SEm=3 and TONI Quotient SEm=7 for 11;0 to 14; 5 year olds and $r=.9$, raw score SEm=3 and TONI Quotient SEm=5 for 14; 6 to 18; 5 year olds.

c. Alternate Forms Reliability - Coefficients of equivalence for Form A and Form B of the TONI using a Pearson product-moment correlation produced: Form A values of .88, .81, and .89 for ages 11;0 to 12; 5, 12; 6 to 14; 11 and 15;0 to 18; 5 respectively; Form B values of .86, and .87 for ages 11;0 to 14; 5 and 14; 6 to 18; 5 respectively.

d. Reliability with special education populations - The TONI was administered to a sample (N=30) of Deaf students with mean age 16; 1 years. The Kuder-Richardson coefficient 21 was used to determine internal consistency, and stability reliability was assessed using the alternate forms method. The Kuder-Richardson coefficients were found to be .90 and .91 for Forms A and B respectively. The coefficient of equivalence, controlled for age, was .87 for the Test of Nonverbal Intelligence.

The Test of Written Language - Second Edition (Hammill, and Larsen, 1988) was evaluated as having the following reliability ratings:

a. Internal Correlational Reliability- Inter-scorer reliabilities for the TOWL-2 Subtests ranged from a low of .84 for Sentence combining subtest on Form A to a high of .99 on the Vocabulary and Spelling subtests on both forms and the Style subtest on form A.

b. Internal consistency on the dichotomously scored tasks was investigated using Cronbach's coefficient Alpha. The internal consistency of the spontaneous subtests was estimated on the basis of a split-half evaluation using the Spearman-Brown correction formula. As well, Standard Error of Measurement (SEm) for the subtests and composites were calculated. For the sample subjects, the average r value across ages and subtests ranged from .74 on Contextual Style (Form B) to .96 on Contextual Spelling (Form A). The r value for composite quotients ranged from .93 to .95. The r value for the Overall Written Language Quotient was .95 for Form A and .94 for Form B.

c. Alternate Forms Reliability - Coefficients of equivalence for Form A and Form B of the TOWL-2 for a sample of Grade One to Seven students produced corrected correlations ranging from .61 on Contextual Vocabulary to .85 on Contrived Writing and Overall Written Language Quotient.

No test of American Sign Language Competence has been developed, standardized and widely used with school age students. Therefore, a less formal means of evaluating a subject's ability to comprehend information presented in sign format must be employed to ensure a minimum instructional fluency.

Reliability

Reliability, or inter-rater agreement, refers to the extent to which observers agree in their ratings or scorings of observations of behaviour. The need for inter-rater reliability occurs for the measurement of: (a) consistency of interpretation ratings, and (b) scoring of semantic, syntactic, and control target usage. Inter-rater raw agreement, occurrence agreement, non-occurrence agreement and Kappa analysis were employed to establish reliability levels for the consistency of interpretation ratings, scoring of semantic, syntactic and control targets,

The need for inter-rater reliability exists for the assessment of semantic, syntactic, and control target usage. Inter-rater reliability was used to demonstrate the consistency of the researchers' ratings of target use at the time of the intervention.

Internal and External Validity

Internal Validity

Internal validity is the extent to which an investigation or experiment eliminates the plausibility or explanations of the results other than the impact of the independent variable(s).

Threats to internal validity included: (a) history, (b) maturation, (c) testing, (d) instrumentation, (e) statistical regression, (f) diffusion of treatment (Kazdin, 1982). The research project addressed the threats to internal validity in the following ways:

(a) history - the effects of growth or maturation that the subject might have introduced into the study were deemed to be evident in both intervention conditions, hence constant; the use of

paired same-day alternating treatments design minimized the time discrepancy between the first and second interventions.

(b) maturation - spontaneous improvement in the writing of deaf adolescents as a result of growth is inconsistent with the literature; regression in levels of demonstrated skill due to fatigue, if existing, would become evident upon analysis of the condition stimulus order; boredom was not deemed to be a threat to internal validity as the subject was free to withdraw from the study at will.

(c) testing - this threat to internal validity was equally relevant to both intervention conditions, thereby becoming a constant when the relative efficacy of the interventions was analyzed,

(d) instrumentation - the skill use in the subject's writing samples will be assessed repeatedly at separate intervals in time to establish a consistency of assessment rating.

(e) statistical regression - measures of the subject's target skill use were made over a period of approximately six months. During that time, control targets were compared with intervention targets giving further evidence of any mean tendencies.

(f) diffusion of treatment - had the subject received instruction on a selected writing skill target in another setting concurrent to the intervention period, the scores for that target would have been eliminated from the data pool, and a new target introduced.

External Validity

External validity refers to the generalizability of the results of the study. The threats to external validity included: (a) generality across subjects, (b) generality across settings, (c) generality across response measures, (d) generality across time, (e) generality across behaviour change agents, (f) reactive experimental arrangements, (g) reactive assessment, (h) pre-test sensitization, and (i) multiple treatment interference (Kazdin, 1982).

These threats to external validity have been addressed in the following manner:

(a) generality across subjects - to the extent possible the subject selection criteria and extensive description of the subject were used to provide information for investigators considering replication of the study, in research or application, to other subjects.

(b) generality across settings - to the greatest extent possible the intervention procedures and extensive description of the setting were used to provide information for investigators considering replication of the study, in research or application, to other settings.

(c) generality across response measures - the target behaviour selection and measurement were documented for investigators considering replication of the study, in research or application, to other behaviours.

(d) generality across time - five sets of post-intervention data were collected for assessment of the generality of the results across time.

(e) generality across behaviour change agents - the use of the interpretation consistency ratings, pre-determined lesson plan format, and instructions and guidelines for interpreters document information for investigators considering replication of the study, in research or application, to other behaviour change agents.

(f) reactive experimental arrangements - the subject's awareness of his/her participation in the research should have affected the alternating treatment results equally. Despite some 'halo' effect, the relative efficacy of the interventions should not be altered.

(g) reactive assessment - the subject's awareness of the evaluation of writing skills acquisition should have affected the alternating treatment results equally. As with the threat of reactive experimental arrangements, the relative efficacy of the interventions should not be altered.

(h) pre-test sensitization - the subject's sensitization to the targets through pre-treatment assessment should have affected the alternating treatment results equally.

(i) multiple treatment interference - the possibility remains that the data gathered was directly affected by the introduction of the two treatment conditions simultaneously. Only further research into the efficacy of each treatment condition separately introduced would overcome this threat to external validity.

Data collection

Administration Times and Conditions

Subsequent to securing approval to conduct research, and parental and subject permission for each student, teacher, interpreter and school jurisdiction, the subject was administered the Phase One pre-test battery. The pre-treatment battery consists of:

Test of Nonverbal Intelligence (if necessary)

Test of Written Language -2

Information Recall - ASL/MCE

Subject selection criteria were checked (audiological information, school placement, etc.) Subsequent to a subject's meeting the selection criteria, Phases Two and Three were implemented in order to reduce any threats to validity introduced by maturation or other unknown treatments or instruction.

Alternating Treatments

During Phase Two alternating treatments for syntactic written language targets were administered with each treatment being included in each session, until criterion was met (demonstration of relative mastery set at 75% correct production of the target syntactic structure for three consecutive sessions repeated over three pairs of syntactic structures, i.e. three ASL-delivered targets or three MCE-delivered targets).

Subsequent to completion of Phase Two, Phase Three was initiated, employing the same method for the semantic language targets.

Photocopies of the student's writing samples were made as permanent records of the data and used for both initial and delayed evaluations required to establish intrajudge reliability.

A randomly alternating counterbalanced treatment schedule was implemented during the intervention phase. For example, the schedule of interventions was as follows:

Schedule 1: Alternating Treatments Schedule for Syntactic Targets

	Day 1	Day 2	Day 3	Day 4 etc.
session 1		ASL	ASL	MCE ASL
session 2		MCE	MCE	ASL MCE

Schedule 2: Alternating Treatments Schedule for Semantic Targets

	Day 1	Day 2	Day 3	Day 4 etc.
session 1		MCE	ASL	MCE MCE
session 2		ASL	MCE	ASL ASL

During the interventions designed to teach the student written English skills, the delivery of instruction in English syntactic and semantic forms through interpretation in ASL or MCE

constituted the independent variables. The subject's number of target skills mastered (out of a possible three per condition) and rate of mastery of target skills (semantic and syntactic targets) constituted the dependent variable data. As well, information was collected periodically on English written syntactic and semantic forms not targeted during the instructional sessions to serve as control data.

Independent Variables

Two independent variables were being introduced through the intervention sessions within this study: interpretation of English writing skill instruction through Manually Coded English, and interpretation of English writing skill instruction through American Sign Language.

Independent Variable Ratings

Interpretation consistency data were collected by videotaping the intervention sessions, following which a rating of predominantly ASL or predominantly MCE were assigned to the interpretation on the basis of analysis 60 second random samples.

The videotaped samples were recorded on Sony ES-HG, VHS videocassette tapes using a Sony Color Video-Camera. Each session was dubbed onto a composite tape before being rated to prevent loss or damage to the original recordings. No alteration to or editing of the video-tape samples' contents was made.

All treatment sessions with the subject were video-recorded to eliminate a potential halo effect that might occur should only selected sessions be recorded, with the educational interpreter being aware of which session were or were not being recorded. Based upon the video-recorded interpretations, consistency ratings were generated for the ASL mode of interpretation and for the MCE mode of interpretation.

Dependent Variables

Specific behaviours being counted to reflect the impact of the independent variables introduced during intervention sessions will include:

1. Number of syntactic targets mastered in each condition

2. Number of semantic targets mastered in each condition
3. Rate of mastery of syntactic targets in each conditions
4. Rate of mastery of semantic targets in each condition

Dependent Variable Data

The rate of improvement to mastery was calculated for each target using split middle celeration of slope procedures for each treatment condition. For example, if a syntactic target in the ASL condition reaches mastery after eight sessions having percentage correct scores of 23, 45, 18, 65, 72, 78, 76, 75 then the rate of change was +3.26 over a seven session interval.

If during the same intervention period the syntactic target in the MCE condition was scored as 25, 32, 45, 60, 61, 65, 74, 72, the rate of change was +2.88 over a seven day period.

Data Analysis

The data analysis procedures of the study consist of several steps. These steps are discussed under subsequent headings: (a) background and screening data treatment, and (b) intervention data analyses. Analysis procedures will include both visual analysis and statistical analysis of the data.

Hypotheses to be tested

The primary question being investigated could be phrased as "Which modality of interpretation (ASL or MCE) presents the Deaf mainstreamed student with the most effective access to written English instruction as reflected in the acquisition and use of syntactic and semantic written English targets?"

To evaluate the relative efficacy of ASL interpretation and MCE interpretation, the following hypotheses were proposed:

1. The rate of improvement to relative mastery of production of target syntactic components of English written language competence taught through interpretation using American Sign Language, and the rate of improvement to relative mastery of production of target syntactic

components of English written language competence taught through interpretation using Manually Coded English are equivalent.

2. The rate of improvement to relative mastery of production of target semantic components of English written language competence taught through interpretation into American Sign Language, and the rate of improvement to relative mastery of production of target semantic components of English written language competence taught through interpretation into Manually Coded English are equivalent.

3. Target components of English written language competence taught through interpretation into American Sign Language, and target components of English written language competence taught through interpretation into Manually Coded English, and target components of English written language receiving no direct instruction will have equivalent rates of improvement to relative mastery of production.

Background and Screening Data Treatment

The information gained from background and screening data were used primarily for descriptive accuracy should replication studies be undertaken.

A3: KRETSCHEMER ANALYSIS COMPILATION

Million years ago in old stone time when cave man who live in hut.

Syntactic:

Embedded prepositional phrase: Million years ago in old stone time when cave man who live in hut.

Article omission: Million years ago during old stone time when cave man who live in () hut.

Embedded Adjective: Million years ago during old stone time when cave man who live in hut.

Regular Plurality: Million years ago during old stone time when cave man who live in hut.

Embedded Adverb: Million years ago during old stone time when cave man who live in hut.

Subordinating conjunction: Million years ago during old stone time when cave man who live in hut.

Singular Noun: Million years ago during old stone time when cave man who live in hut.

Past Tense Verb Error: Million years ago during old stone time when cave man who live in hut.

Semantic:

Noun cases:

patient	hut
phenomenon	years, time,
agent	man

Verb cases:

process	live
---------	------

Modifier cases:

age	old
cardinal	million

Adverbial cases:

time-action	Million years ago in old stone age when
-------------	---

Have a lots of tree on earth and rocks mountain.

Syntactic:

Subject node omission:	(They) have a lots of trees on earth and rocks mountain.
Contractible copula:	(have) a lots of trees on earth and rocks mountain
Violation of number agreement	have (a) lots of trees on earth and rocks mountain.
Regular Plurality:	have a (lots) of trees on earth and rocks mountain.
Embedded prepositional phrase	have a lots (of trees) (on earth) and rocks ((on)mountain).
Preposition omitted:	have a lots of trees on earth and rocks (on)mountain.
Coordinating conjunction:	have a lots of trees on earth and rocks mountain.

Semantic:

Noun cases:

entity-complement	trees, earth, rocks, mountain
-------------------	-------------------------------

Verb cases:

ambient-stative:	have
------------------	------

Modifier cases:

quantity	lots-of, a
----------	------------

Adverbial cases:

locative-stative	on
------------------	----

One guy saw one large mammoths is walk close the camp area.

Syntactic:

Modifier cardinal:

One guy saw **one** large mammoths is walk close the camp area.

Subject node:

One **guy** saw one large mammoths is walk close the camp area.

Irregular Past:

One guy **saw** one large mammoths is walk close the camp area. .

Modifier-size:

One guy saw one **large** mammoths is walk close the camp area.

Regular Plural:

One guy saw one large **mammoths** is walk close the camp area. .

Violation number agreement:

One guy saw **one** large **mammoths** is walk close the camp area.

Contractible copula:

One guy saw one large mammoths **is** walk close the camp area.

Tense violation:

One guy **saw** one large mammoths **is** walk close the camp area.

Subordinate Conjunction omission: One guy saw one large mammoths (**that**)is walk close the camp area.

Omission of Progressive tense

One guy saw one large mammoths **is walk** close the camp area.

Adverbial proposing

One guy saw one large mammoths is walk **close** the camp area.

Preposition omission:

One guy saw one large mammoths is walk close (**to**) the camp area.

Article:

One guy saw one large mammoths is walk close **the** camp area.

Adjective embedding:

One guy saw one large mammoths is walk close **the camp** area.

Object of the preposition:

One guy saw one large mammoths is walk close **the camp area**.

Semantic:

Noun cases:

agent	guy
complement	mammoths, area

Verb cases:

process:	saw
action-affective	is walk

Modifier cases:

quantity	one, one
existence	the
size	large

Adverbial cases:

locative-action	close the camp
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Then he call hunter to grabbed the spear and ran and begin fight to mammoth when men throw the spear at mammoth.

Syntactic:

Adverb:

Then he call hunter to grabbed the spear and ran and begin fight to mammoth when men throw the spear at mammoth.

Pronominalization:

Then **he** call hunter to grabbed the spear and ran and begin fight to mammoth when men throw the spear at mammoth.

Past tense verb error:

Then he **call** hunter to grabbed the spear and ran and **begin** fight to mammoth when men **throw** the spear at mammoth.

Irregular Past tense:

Then he call hunter to grabbed the spear and **ran** and begin fight to mammoth when men throw the spear at mammoth.

Article omission:

Then he call () hunter to grabbed the spear and ran and begin fight to () mammoth when men throw the spear at () mammoth.

Article:

Then he call hunter to grabbed **the** spear and ran and begin fight to mammoth when men throw **the** spear at mammoth.

Singular Noun:

Then he call **hunter** to grabbed the **spear** and ran and begin fight to **mammoth** when men throw the **spear** at **mammoth**.

Infinitive error:

Then he call hunter **to grabbed** the spear and ran and begin **fight** to mammoth when men throw the spear at mammoth.

Coordinating conjunction:

Then he call hunter to grabbed the spear **and** ran **and** begin fight to mammoth when men throw the spear at mammoth.

Subordinating conjunction:

Then he call hunter to grabbed the spear and ran and begin fight to mammoth **when** men throw the spear at mammoth.

Semantic:

Noun cases:

agent

he, men

patient

spear

complement

spear, mammoth

Verb cases:

action-causative

call, grab, ran, begin, fight, throw

Modifier cases:

existence

the

Adverbial cases:

locative-goal

at mammoth

time-action

when

And happen mammoth kill one man.

Syntactic:

Coordinating conjunction error:	And happen mammoth kill one man.
Singular noun:	And happen mammoth kill one man .
Article omission:	And happen () mammoth kill one man.
Past tense verb error:	And happen mammoth kill one man.
Adjective	And happen mammoth kill one man.
Subject node omission:	And (it?)happen mammoth kill one man.
Sub. conjunction omission	And happen (that?) mammoth kill one man.

Semantic:

Noun cases:

agent	mammoth
complement	man

Verb cases:

action-causative	kill
------------------	------

Modifier cases:

quantity	one
----------	-----

Now he is lay in path and died.

Syntactic:

Adverb: Now he is lay in path and died.

Pronominalization: Now **he** is lay in path and died.

Past tense error: Now he **is** lay in path and died.

Progressive Verb error: Now he is **lay** in path and died.

Preposition: Now he is lay **in** path and died.

Singular noun: Now he is lay in **path** and died.

Coordinating Conjunction: Now he is lay in path **and** died.

Verb tense error: Now he is lay in path and **died**.

Semantic:

Noun cases:

entity he, path

Verb cases:

process: is lay, died

Adverbial cases:

locative-stative in path

They is still fight at mammoth then has more men come to joined them to helping fight at mammoth.

Syntactic:

Pronominalization: **They** is still fight at mammoth then has more men come to joined **them** to helping fight at mammoth.

Copula: They **is** still fight at mammoth then **has** more men come to joined them to helping fight at mammoth.

Copula number error: They **is** still fight at mammoth then has more men come to joined them to helping fight at mammoth.

Adverb: They is still **fight** at mammoth then has more men come to joined them to helping fight at mammoth.

Verb tense error: They is still **fight** at mammoth then has more men come to joined them to helping fight at mammoth.

Prepositional error: They is still fight **at** mammoth then has more men come to joined them to helping fight **at** mammoth.

Article omission: They is still fight at () mammoth then has more men come to joined them to helping fight at () mammoth.

Subordinate conjunction error: They is still fight at mammoth **then** has more men come to joined them to helping fight at mammoth.

Embedded Adjective: They is still fight at mammoth then has **more** men come to joined them to helping fight at mammoth.

Irregular plural noun: They is still fight at mammoth then has more **men** come to joined them to helping fight at mammoth.

Present tense verb: They is still fight at mammoth then has more men **come** to joined them to helping **fight** at mammoth.

Infinitive error: They is still fight at mammoth then has more men come to **joined** them to **helping** fight at mammoth.

Semantic:

Noun cases:

entity they, men

complement mammoth

Verb cases:

action-causative

is fight, come, to join, to help, fight

Modifier cases:

recurrence

more

For an hours finish they killed the one mammoth and all other mammoths run away.

Syntactic:

Preposition:

For an hours finish they killed the one mammoth and all other mammoths run away.

Article:

For **an** hours finish they killed **the** one mammoth and all other mammoths run away.

Plural Noun:

For an **hours** finish they killed the one mammoth and all other **mammoths** run away.

Verb use error:

For an hours **finish** they killed the one mammoth and all other mammoths run away.

Pronominalization Plural:

For an hours finish **they** killed the one mammoth and all other mammoths run away.

Past tense verb:

For an hours finish they **killed** the one mammoth and all other mammoths run away.

Adjective:

For an hours finish they killed the **one** mammoth and **all other** mammoths run away.

Singular Noun:

For an hours finish they killed the one **mammoth** and all other mammoths run away.

Coordinating Conjunction:

For an hours finish they killed the one mammoth **and** all other mammoths run away.

Irregular past verb error:

For an hours finish they killed the one mammoth and all other mammoths **run** away.

Adverb:

For an hours finish they killed the one mammoth and all other mammoths run **away**.

Semantic:

Noun cases:

agent

they

complement

mammoth(s)

Verb cases:

process-causative

killed

action

run

Modifier cases:

cardinal

one, all

existence

the

recurrence

other

Adverbial cases:

locative-goal

away

time-end

for an hours finish

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Syntactic:

Pronominalization Plural:

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Pronominalization possessive:

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Copula:

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Infinitive error:

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Article:

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Singular noun:

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Plural noun:

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Article error:

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Past tense irregular:

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Preposition:

They had to cutter the mammoth for the meat and they got a furs from mammoth for the their clothes.

Semantic:

Noun cases:

agent

They

possessor

their

complement

mammoth, meat, furs, clothes

Verb cases:

action-causative:

cut, got

Modifier cases:

existence

a, the

A4: POOL OF WRITING TARGETS

The following pool of potential writing targets was generated from the Kretschmer Analysis of Writing applied to the spontaneous writing sample collected as part of the TOWL-2 administration.

Syntactic Targets

Level III

Modulations:

- progressive
- uncontractible copula
- uncontractible auxiliary
- modals

Elaborated nodes:

- noun adjunct embedding

Level IV

Modalities:

- negation
- indirect discourse
- direct discourse
- imperative
- yes-no question
- wh question

Elaborated nodes:

- relative clause
- nominalization-possessive + verb + ing
- nominalization-infinitive
- nominalization-participle

Transformations:

- do-support
- contraction
- indirect object preposing
- auxiliary preposing
- passive
- deletion
- there

Semantic Targets

Level II

Noun cases:

- mover
- experiencer
- recipient
- content
- phenomenon
- vocative

Verb cases:

- process-affective
- ambient-action

Modifier cases:

- non-existence
- condition
- shape
- quality
- color
- ordinal

Adverbial cases:

- reason
- locative-stative
- locative source
- time-duration
- time-beginning, end
- time-frequency
- manner

Level III

Noun cases:

- entity-equivalent

Verb cases:

- stative-static
- stative-dynamic

ambient-stative
Adverbial cases:
intensifier
inclusion
comparison

A5: INTERVENTION GUIDELINES

Intervention Format

Intervention Instructions for Educational Interpreter

Intervention Format Outline

Each intervention format will follow a prescribed sequence using a Model-Lead-Test format:

Introduction to the lesson

Statement of the objective (selected from pre-testing)

Model: Examples of the target in context and in isolation will be modeled

Lead: The student will be lead through the writing of six examples of the target

Test: The student will attempt to produce the target in twelve contexts

Writing: The student will be asked to generate a written language sample at pre-set intervals in the study.

Intervention Instructions for Educational Interpreter

Intervention Sessions:

Your primary responsibility during the intervention sessions will be to interpret the teacher's instruction using the assigned mode of interpretation - American Sign Language (ASL) or sign English (sE). Try to make your interpretation as complete as possible. Attempt at all times to use the assigned modality consistently.

A secondary responsibility will be for you to reverse interpret the student's signed comments or questions.

A third responsibility will be the completion of an initial and a follow-up questionnaire.

It is **not** your responsibility to pre-teach or post-teach any of the English Writing Skills contained in the intervention sessions. Should the student approach you outside of the class time, and ask for help specifically relating to the features of English writing taught during the intervention sessions, please refer the student to the researcher.

Do not tutor or teach the student the specific English Writing Skills covered in the intervention sessions.

Thank you for your cooperation.

A6: INTERIM WRITING SAMPLES

Interim Writing Sample

1. POST Syntax 2A3

ONCE upon A time ghost age is 9 years old. Earl is in ()shower THE shower and ()ghost boy is go to HIS apart and enter into HIS bathroom. And Earl shock when he saw A ghost go tougher THE door. Then Earl *get* screaming and HIS hair is get up like A electrain shock. Then he became white skin. he ran toghter THE wall and break in THE hole THE wall and is in () kicteh and find ()candy. Then give A candy to ()ghost and ----- . Then ()ghost () gone. Then he melted.

SYNTACTIC TARGETS

- 1A subordinate conjunction that/what (0/0)
- 1B subject / be verb agreement (5/7)
- 1C do support (0/0)
- 2A determiner number agreement with noun (12/18)
- 2B infinitive verb form (0/0)
- 2C participle (0/0)
- 3A appositives set off by commas (0/0)
- 3B introductory subordinate clause set off by comma (0/0)
- 3C direct discourse (0/0)

SEMANTIC TARGETS

- 1A modifier of condition (0/0)
- 1B modifier of quality (0/0)
- 1C modifier of nonexistence (0/0)
- 2A modifier of time: frequency (0/0)
- 2B modifier of time: duration (0/0)
- 2C modifier of time: beginning (0/0)
- 3A modifier of comparison (0/1)
- 3B modifier: intensifier (0/0)
- 3C modifier: inclusion (0/0)

2. POST Syntax 3A3

I (am) dreaming, for Christmas prent, I wish is Lamborghini Contach, a Italian sportly car. I favor color is Gloss Black, on over Lamborghini 'Contach" body with rear wing, on () rear of () car. And 10K Gold Rims Wheels and words, on () back of () car, types of Model and Lamboghini. And () Interior color is Tan.

SYNTACTIC TARGETS

- 1A subordinate conjunction that / what (0/0)
- 1B subject / be verb agreement (4/4)
- 1C do support (0/0)
- 2A determiner number agreement with noun (1/6)
- 2B infinitive verb form (0/0)
- 2C participle (0/0)
- 3A appositives set off by commas (1/1)
- 3B introductory subordinate clause set off by comma (0/0)
- 3C direct discourse (0/0)

- 1A modifier of condition (0/0)
- 1B modifier of quality (0/0)
- 1C modifier of nonexistence (0/0)
- 2A modifier of time: frequency (0/0)
- 2B modifier of time: duration (0/0)
- 2C modifier of time: beginning (0/0)
- 3A modifier of comparison (0/0)
- 3B modifier: intensifier (0/0)
- 3C modifier: inclusion (0/0)

SEMANTIC TARGETS

3. POST Semantic 1B3

I wish for Christmas gift is.... smart sexually girly model. Um. That's all. But I only want White or Tan North American girly. Not other country girl!! And Lotus Espirt S4 and Lamborghini Diablo.

SYNTACTIC TARGETS

- 1A subordinate conjunction that/what (0/0)
- 1B subject / be verb agreement (2/2)
- 1C do support (0/0)
- 2A determiner number agreement with noun (1/4/)
- 2B Infinitive verb form (0/0)
- 2C participle (0/0)
- 3A appositives set off by commas (0/0)
- 3B introductory subordinate clause set off by comma(0/0)
- 3C direct discourse (0/0)

SEMANTIC TARGETS

- 1A modifier of condition (0/0)
- 1B modifier of quality (3/3)
- 1C modifier of nonexistence (0/0)
- 2A modifier of time: frequency (0/0)
- 2B modifier of time: duration (0/0)
- 2C modifier of time: beginning (0/0)
- 3A modifier of comparison (0/0)
- 3B modifier: intensifier (0/0)
- 3C modifier: inclusion (0/0)

4. POST Semantic 2B3 (December 19, 1994)

() Lamborghini Diablo SE colored is Metallic purple, They have new kind of rear wings /
/is low and () side of () rear wing was spoiler and () new kind of Rim // has 5 big hole around
and clearly Rim. and () size is 17". (the) Engine has go more horsepower is 525 hp and they use
(a) dogteeth shift for (the) Maunal Tranmissison. For (the) interior has (a) Carbon Fiber all clear,
dash, But not on (the) Console has use leathering.

SYNTACTIC TARGETS

- 1A subordinate conjunction that/what (0/2)
- 1B subject / be verb agreement (6/8)
- 1C do support (0/0)
- 2A determiner number agreement with noun (0/11)
- 2B Infinitive verb form (0/0)
- 2C participle (0/0)
- 3A Appositives set off by commas (0/0)
- 3B Introductory subordinate clause set off by comma (0/0)
- 3C direct discourse (0/0)

SEMANTIC TARGETS

- 1A modifier of condition (2/2)
- 1B modifier of quality (0/0)
- 1C modifier of nonexistence (0/0)
- 2A modifier of time: frequency (0/0)
- 2B modifier of time: duration (0/0)
- 2C modifier of time: beginning (0/0)
- 3A modifier of comparison (0/0)
- 3B modifier: intensifier (0/0)
- 3C modifier: inclusion (0/0)

A7: INTERPRETATION MODALITY CONSISTENCY RATINGS

Judge:

Session date:

Sample

#:

Tally occurrences of the following features of the interpretation as present or omitted.

Features	Present	Features	Present
English markers:		Classifiers:	
-s plural		3 hand	
's possessive		hand curved (c)	
-ed		5 hand	
-ing		b hand	
-er comparative		g hand	
-est superlative		index (1)	
Initialized signs		Facial negatives	
articles		Facial questions	
be verbs		Initialized signs	
I		Directional signs	
He / She		ASL violations	
They / Them		Be verbs	

A8: COLLATERAL DATA

Form 1: Parent Questionnaire

Form 2: Subject Questionnaire

Form 3: Educational Interpreter Questionnaire

Form 4: Educational Interpreter Follow-up Questionnaire

Form 1: Parent Questionnaire

1. At what age was your child's hearing loss diagnosed. at birth - because of prenatal information the doctors checked right away - certainly by age 8 months when we adopted.

2. Did your child attend an early intervention (preschool) program for children with a hearing loss? ☒ yes ☐ no

If yes, for how long?

☐ less than a year

☐ 1-2 years

☐ 3 - 4 years

☒ 4+ years

3. What year did your child begin grade one? 1982 One year of kindergarten in the Mainstream.

4. For how many years has your child been in an integrated class?

Our child spent 8 years at a school for the deaf and has now been integrated for 5 years.

5. How would you rate your family's socio-economic status?

☐ upper class

☒ middle class

☐ lower class

Questions 5 - 9 are to be answered by the mother:

5. Estimate the amount of time you communicate with your child using signing (specify type of manual communication English signs)

☐ 0-25% of the time

☐ 26-50% of the time

- ☐ 51-75% of the time
☒ 76-100% of the time

6. Estimate the amount of time you communicate with your child using writing.

- ☒ 0-25% of the time
☐ 26-50% of the time
☐ 51-75% of the time
☐ 76-100% of the time

7. Estimate the amount of time you communicate with your child using speech and speechreading (lipreading).

- ☒ 0-25% of the time
☐ 26-50% of the time
☐ 51-75% of the time
☐ 76-100% of the time

8. Please indicate the your highest completed level of education.

- ☐ junior high school
☐ high school
☐ post-secondary training
☒ university or college degree

Questions 10 - 14 are to be answered by your child's father:

9. Estimate the amount of time you communicate with your child using signing (specify type of manual communication English signs)

- ☒ 0-25% of the time
☐ 26-50% of the time
☐ 51-75% of the time
☐ 76-100% of the time

10. Estimate the amount of time you communicate with your child using writing.

☐ 0-25% of the time

☐ 26-50% of the time

☐ 51-75% of the time

☒ 76-100% of the time

11. Estimate the amount of time you communicate with your child using speech and speechreading (lipreading).

☒ 0-25% of the time

☐ 26-50% of the time

☐ 51-75% of the time

☐ 76-100% of the time

12. Please indicate the your highest completed level of education.

☐ junior high school

☐ high school

☒ post-secondary training

☐ university or college degree

Form 2: Subject Questionnaire

1. Put a check mark (☒) beside the method of communication you prefer when communicating with:

a. a friend:

☒ (deaf) ASL ☐ MCE ☒ (hearing) Writing ☐ Speech/ Speech reading ☐ other

b. your mother

☐ ASL ☒ MCE ☐ Writing ☐ Speech/ Speech reading ☐ other

c. your father

☐ ASL ☒ MCE ☐ Writing ☐ Speech/ Speech reading ☐ other

d. your oldest sister

☐ ASL ☒ MCE ☐ Writing ☐ Speech/ Speech reading ☐ other

e. your next oldest sister

☐ ASL ☒ MCE ☐ Writing ☐ Speech/ Speech reading ☐ other

f. your younger sister

☐ ASL ☐ MCE ☐ Writing ☐ Speech/ Speech reading ☒ other(nothing)

g. your interpreter/tutor

☒ ASL ☐ MCE ☐ Writing ☐ Speech/ Speech reading ☐ other

h. your teacher

☐ ASL ☐ MCE ☒ Writing ☐ Speech/ Speech reading ☐ other

2. Do you use a T.V. caption decoder at home?

☐ yes ☐ No (sometime, very old, C.C. is don't work well by years!)

3. Estimate the amount of time you spend watching T.V. each week:

☐ 0-5 hours ☒ 6-10 hours ☐ 11-15 hours ☐ 16 or more

4. What percentage of the T.V. shows that you watch are captioned ?

☐ 0 - 24% (less than 1 out of every 4)

☐ 25-49 % (between 1/4 and 1/2 of the shows)

☐ 50-74% (between 1/2 and 3/4 of the shows)

☐ 75-100% (between 3/4 and all of the shows)

Form 3: Educational Interpreter Questionnaire

1. Please mark () the category that best describes your situation:

a. years experience as a signer

☐ less than one

☐ 1-3 years

☐ 4-5 years

☐ 5+years

b. ASL training:

☐ Level 1

☐ Level 2

☐ Level 3

☐ Level 4

☐ Level 5

c. years experience as an educational interpreter

☐ less than one

☐ 1-3 years

☐ 4-5 years

☐ 5+years

d. years experience using some version of sign English

☐ less than one

☐ 1-3 years

☐ 4-5 years

☐ 5+years

e. preferred mode of interpretation for general academic classes

☐ ASL

☐ sign English

- ☐ oral
- ☐ other

f. preferred mode of interpretation for English Language Arts classes

- ☐ ASL
- ☐ MCE
- ☐ oral
- ☐ other

g. Please rank order the types of interpreting you feel comfortable doing from most comfortable (1) to least comfortable (5)

- 2 voice to ASL
- 1 voice to MCE
- 5 voice to oral
- 3 ASL to voice
- 4 MCE to voice

2. For how long have you worked with this subject?

- ☐ less than 1 year
- ☐ 1-2 years
- ☐ 3-4 years
- ☐ more than 4 years

Form 4: Educational Interpreter Follow-up

We would like to know about your personal insights into the interpreting process during this research project. Please answer the following questions and include comments or examples if any come to mind. Your comments are very helpful and are an important part of this research.

1. During the research project, did you feel one mode of interpreting (ASL or SE) was better than the other? If yes, which one and why?

Sign English, which is the established communication format with the student as he embarks on his English course for his general diploma

2. Do you think that the content of the lesson being interpreted will influence your choice of mode of interpretation?

Yes. If fairly complicated with difficult concepts introduced, I will use more ASL format for the student.

3. Does «subject» ever request that you switch from ASL to SE or SE to ASL?

If so, under which circumstance does the student request ASL?

No.

Under which circumstances does the student request MCE?

None. The student trusts my judgement as to what is best for him dependent on subject matter.

4. Do you spontaneously switch from ASL to MCE on occasions?

If yes, under what circumstances?

Yes. If difficult concept is understood I switch to Sign English for English comprehension skills transfer.

5. Do you spontaneously switch from MCE to ASL on occasions?

If yes, under what circumstances?

Yes. If subject matter becomes difficult and concepts will be easier for the student to understand through ASL - or I will use ASL for additional concept classification if I have time.

6. If the findings indicate that one interpretation modality is associated with faster acquisition of skills by the student, would you use consistently use that mode of interpreting in future lessons? Why or why not?

Again, I am flexible on modality based on the student's acquisition comfort level.

A9: RECEPTIVE COMPETENCIES SCREENING

The subject completed a series of subtests on the Information Recall Test to assess the student's relative comprehension of information presented in ASL and information presented in sign English.

<u>ASL Stories</u>	<u>Score</u>
Story One:	3/6
Story Two:	5/6
Story Three:	4/6
Story Four:	3/6
TOTAL	15/24 = 62.5%

<u>sign English Stories</u>	<u>Score</u>
Story One:	2/6
Story Two:	6/6
Story Three:	6/6
Story Four:	0/6
TOTAL	14/24 = 58.3%

A10: PRE-TEST RESULTS

The Test of Written Language - Second Edition (Form A) was administered to the participating subject to collect baseline data. A spontaneous written language quotient of 63 (mean = 100 ± 16) was obtained. Subtest standard scores were as follows:

Subtest	Standard Score (10 ± 3)
Vocabulary	3
Spelling	5
Style	5
Logical Sentences	4
Sentence Combining	11
Thematic Maturity	9
Contextual Vocabulary	4
Syntactic Maturity	2
Contextual Spelling	7
Contextual Style	5
Composite Scores	Quotient (100 ± 15)
Contrived Writing	70
Spontaneous Writing	62
Overall Written Language	64

The spontaneous writing sample collected was also analysed using a Kretschmer Language Analysis method.

APPENDIX B: QUALITATIVE RESEARCH

B1: CONSENT TO PARTICIPATE

I, _____, am aware that the purpose of this project is to understand the educational interpreter's experience of interpreting in ASL and Sign English for a deaf student during an English literacy lessons. Through the use of an interview format, I will be asked to describe my experiences in as much detail as possible. I understand that the present project is being conducted as a requirement for a course in Qualitative Research under the supervision of Dr. Serge Hein of the Department of Educational Psychology at the University of Alberta.

I agree to participate in the project and I am willing to share my experiences with the interviewer. I am aware that one interview of approximately one hour in length will be video and audio taped so that it can be transcribed for later analysis. I realize that my participation in the project is completely voluntary and that I can withdraw from the project at any time without prejudice. If I choose to withdraw from the project, any information about me or any data that I provide will be destroyed. I am also aware that if discussion of my experiences raises any concerns for me that I wish to discuss further with a counselor, Patti Hill will suggest individuals that I might contact.

I am aware that all information associated with this project is strictly confidential and that my identity, or that of any persons that I mention will be known only to the interviewer and will not be revealed at any time. When transcribing the interview recordings, the interviewer will use pseudonyms (i.e., false names) for my name and those of any persons that I mention. These pseudonyms will be used in writing the final report. Any details in the interview recordings that might identify me or any persons that I mention will be changed during the transcribing. Furthermore, the interviewer will be the only person with access to the tapes. Only the transcriptions altered to ensure anonymity will be shared with others. Recordings will be erased when the transcriptions are complete.

I am also aware that the information obtained from the interview will be used by the interviewer solely for the purpose of this project and in fulfillment of the graduate student

requirements, and that the transcript of the interview may be included in the appendices of the interviewer's thesis. Any portion of the transcript that is not included in the appendices will be destroyed following completion of the project.

Signature: _____

Date: _____

Witness: _____

B2: STUDY DESCRIPTION

I am a graduate student in the Special Education Program at the University of Alberta, Department of Educational Psychology. For my project, I am doing a descriptive study of the experience of interpreting for a deaf student in an English literacy educational program.

Your participation in the project will be in the form of three interviews with myself. The first interview when you receive this description gives us an opportunity to learn something about each other's backgrounds. During this interview I will also explain a) the nature of the study, b) why you've been selected and c) answer any questions that you may have.

Before our second interview takes place, I would like you to take some time to think about your experiences as they relate to the topic. Specifically, think about your personal experiences interpreting in ASL and Sign English during English lessons. Think about the thoughts, feelings, and reactions or sensations you experienced during the interpreting. Also reflect on the context in which you were asked to use ASL interpreting and Sign English interpreting. As you think about your experiences, it may be helpful for you to write down any important thoughts or details so that you can refer to them during the data - collecting interview.

During our second interview, I will ask you to describe your experiences of interpreting in the English literacy lessons using ASL and Sign English. It is an open-ended interview without a standardized question format: the direction the interview takes will be based upon what is discussed. It is important that you describe your actual lived experience on the topic. Please tell me about your experiences just as they happened. Remember, there are no 'right' or 'wrong' responses to any questions I may ask. What I'm looking for from you is complete honesty. (Don't tell me what you think I may want to hear; I want to hear about your experiences, whatever they may be.) The second interview (the data collecting interview) will be about one hour long.

During our final interview, we will examine my understanding of your experience. That is, after analyzing the interview data, I will end up with a brief description of the essential aspect of

your experience. We will discuss this final description in order to determine how accurately it describes your experience. After I have completed the project, I will share my findings with you.

I want to mention that your participation in the project is voluntary. Also, all information will be kept strictly confidential and you can withdraw from the project at any time without penalty. If you decide that you no longer want to participate in the study, all information about you will be destroyed.

If you have any other questions or if you would like to discuss anything with me, please feel free to phone me.

Patti Hill
464-5809

B3: EXCERPTS, PARAPHRASES AND FIRST ORDER THEMES

Excerpts	Paraphrases	First order themes
1. When you're confined to a strict modality of a particular kind it makes it <i>extremely</i> limited in what you can do to communicate the message that is being conveyed to a deaf person from the hearing person 2. there were times when he would like to use in both. So when set with one particular kind, some days went better than other days.	feels extremely limited in communication strategies when confined to one modality aware that the student likes to use both modalities; experiences varying success when set with one modality	1. confinement to one modality experienced as extremely limiting 2. awareness of student's modality preference; <u>success fluctuates</u> with set modality

3. outside a clinical situation in interpreting with a client, you may swing from on one to the other. You can pull from both. Or you can go with English if that is what is preferred or with ASL if that is the preferred, but when it is set there is no going, using, borrowing one from the other modality to use in the other. That's when it becomes confining. And sometimes hard to get across to the subject in this case I found sometimes.

4. As it was clinical [setting]..... [the limited modality] was okay for me because that's what I had to do

5. If it was outside the situation and I was working in an interpreting situation where the modality was chosen, I think it would be more frustrating.

6. If I was outside the clinical setting and I was told this is the modality that *had* to be used even though that wasn't always beneficial for the person I was interpreting for, yeah, I would be more uncomfortable with that situation.

accustomed to using modality shifting between American Sign Language (ASL) and (English Sign Language (ESL); unable to borrow across modalities when modality is set; finds use of one modality only confining; experiences difficulty communicating message sometimes

expresses acceptance of single modality in clinical setting

perceives increased frustration with restricted modality outside of the project

feels uncomfortable being restricted if restriction is perceived as non-beneficial

3. modality shifting used in interpreting; set modality creates difficulties in communicating with student

4. acceptance of single modality in project

5. frustration with restriction on interpreting modality

6. sense of conflict when restricted modality and benefits are at odds

7. you can tell that it's [ESL mode] not working because they just kind of get this glassy-eyed look on their face. Um ... so you automatically throw in something in an ASL structure or you would clarify

intuits that the modality is not communicating effectively and responds to student's facial cues; supplements ESL mode with ASL mode or clarifies; felt restricted from supplementing

7. aware of communicative effectiveness and responds to student's nonverbal cues; supplementation by shifting modalities or clarifying;

8. In our clinical situation, I was restricted from doing that [switching modalities].

feels restricted from switching modes

8. sense of being restricted from shifting modalities

9. I don't know if I felt frustrated for myself or frustrated for the subject

empathizes with student's situation

9. empathizes with student

10. I'm used to success so yeah, there are conflicting feelings when the message isn't getting across

accustomed to success; has conflicting emotions when unsuccessful

10. experiences conflict between general role and specific situation

11. [I] was limited in what [I] could do to get the message across, and because of that, I would feel some frustration with that because I wasn't allowed to do what the full interpreting requirement would be.

feels frustration in being limited in communication strategies; feels frustration in not being allowed to meet the job requirements

11. frustration with limited strategies and with inability to fulfill job requirements

12. In this case, if you didn't get the message across, that was okay because that was the modality you were using that day but it was still very frustrating.

very frustrated by failure to communicate successfully

12. frustration with sense of failure

13. to not get the message across. or for it to be okay not to get the message across. That was somewhat, that was *hard* to get used to.

had difficulty becoming accustomed to lack of communication success

13. difficulty accepting failure

14. [Now] I would use the modality preferred by the client no question.

strong commitment to use of student's preference

14. commitment to student's modality preference

15. [I would] go with what the client wants, basically, unless there is a specific requirement that you are being asked to use a specific modality. If it [the client's preference] is ASL and you're asked to use English Sign Language to improve their English skills, then I can understand that, but if the goal is still getting communication across, I would augment with ASL if I had to, using mostly English Sign Language.

respects client's preference unless a specific requirement contra-indicates; aware of need to compromise to meet 2 objectives (English skills and clear communication)

15. respects client's modality preference; compromise between conflicting objectives (client vs. content preference)

16. there can be a conflict in what the professional experts are requesting and what the client prefers.	acknowledges conflict between experts' and client's preferences	16. conflict between various parties' preferences
17. I understand the goal and the need to English Sign Language in the educational setting because the goal is to have them understand English structure. But , if, um, the goal is also to get the message across from the instruction that is going on in the classroom and English Sign Language isn't cutting it, then you have to swing into something else which is usually an ASL supported method of communication.	acknowledges use of ESL for structural goal and use of ASL to facilitate communication	17. acknowledges communication objective dictates modality
18. Now, it [my preference] is ESL.	prefers ESL	18. preference stated as ESL
19. I don't think I picked a preference. I just think it became something that happened over time.	preference not selected; rather emerged over time	19. preference emerged over time
20. it became ESL. It started off as ASL	preferred ASL then preference became ESL	20. preference changed (ASL_ESL)
21. I think for English literacy you have to use the ESL structure.	believes ESL is required for English literacy	21. modality required for literacy is identified

22. [the student's ASL background] made instructing in English literacy extremely hard	experienced extreme difficulty with teaching of English literacy because of student's ASL background	22. difficulty conveying English to ASL-using student
23. time spent refocusing [the student] was the most frustrating part of the whole program.	frustrated by time allocated to refocusing student	23. frustration with use of project time on student's lack of focus
24. overall frustration when things are more difficult than they have to be..... Compounded by the fact that you're frustrated in the fact that you have a strict modality to get the method of communication across.	realizes frustration is from unnecessary difficulties with student and the strict modality	24. frustration from difficulties with student and modality
25. [I] kind of wonder at the end of the session whether or not it was the method of communication or the fact that the subject was unfocused.	questions reason communication failed: student focus or mode of communication	25. source of communication failure questioned
26. [if the student is] not into the lesson that day, then I'm okay with that too. They have a right not to get the message	acknowledges student's right not to get the message	26. responsiveness to student's situation & perspective
27. answering question about dealing with frustration: [I] did the best [I] could to focus the subject and just plowed on as best [I] could.	deals with frustration by focusing the student and continuing to interpret	27. attempts to eliminate source of frustration

28. It was after, in debriefing, that [I] dealt with frustrations.

delays response to frustration until debriefing

28. delays response to frustration

29. if the subject coming into the session, was unfocused for the afternoon we'd know that it was pretty well going to carry over into the project. um.. but that still doesn't negate the fact that you're frustrated with the whole process.

understands that the student's state would effect the session; understanding didn't negate the frustration

29. frustration not diminished by knowledge (emotional vs. cognitive)

30. [The teacher and I] would talk about just the session itself. Affirmation that it was more the subject than how the interpreting was going was somewhat of a relief I guess.

debriefs with teacher about session; receives affirmation that the problems were based with the student not his work; feels relief

30. debriefing brings sense of affirmation and relief

31. [felt better] In that [I] did the best that [I] could that day with what [I] had do work with

feels better knowing he has done his best

31. comforted by knowledge his best effort was given

32. [working with this teacher] was very pleasant

experiences working with this teacher as very pleasant

32. very pleasant teacher: interpreter relationship

33. The instructor was understanding um.. of what everybody was going through - - myself as the interpreter and the subject as well.

perceives teacher as very understanding of his and student's situation

33. instructor perceived as understanding

34. I think it became a point in time where the instructor could read the subject before I had to say what kind of day it was. At first, I had to kind of come in and give a quick run down of what I'd expect to happen and after a while I didn't have to do that. [The teacher] She could always tell.

35. (relationship with that teacher?) Positive. I Mean, you're both doing the best you can to get the message across.

36. there were times when the instructor would assist in trying to focus the student in what was the goal of the session. And that wasn't always an easy process. So, [my perception of the teacher was] supportive, I would say.

37. Within the project itself, the frustrations that were felt were equal to some of the things that we would deal with on a daily basis.

initially had to brief teacher about student; later perceives teacher can 'read' the student'

working with teacher is positive; perceives they are both doing the best they can to achieve the goal

aware of instructor's trying to assist; recognizes difficulty of the process of focusing the student; perceives teacher as supportive

equates frustrations in project to those experienced on a daily basis

34. roles change to reflect equality (teacher: interpreter)

35. positive relationship with teacher; perception of joint effort to achieve a common goal

36. teacher assists with difficulties; supportiveness from teacher

37. level of frustration in and out of project perceived as equivalent

38. I didn't see anything different within the project than I saw outside the project in the nature of being unfocused and not into it on certain days and on other days being really into it and really wanting to work hard and succeed and then the session would go rather quickly. But other days, no ... And it was the same feeling outside the project: when the student was into it and focused for the day it went a lot easier of course but if he was not focused the day was longer

39. The sessions were long. Tiring, exhausting, draining.

40. if it was a tough day, it was a *tougher* session

41. there was a point, I would say, some days in the project where I was fighting exhaustion. And mental fatigue more than anything.

perceives student's focus and motivation as fluctuating within and outside of the project

experiences sessions as tiring, exhausting, draining, long

experiences increased difficulty in sessions if the day had been difficult

feels mental exhaustion at one point in the project

38. student's focus and motivation fluctuates in and out of project

39. interpreting experienced as mentally exhausting

40. influence of a difficult day on a subsequent session

41. demands of interpreting were mentally exhausting sometimes

42. The preceding day going into the project, *not* the project itself [contributes to the mental exhaustion]. The project would sometimes add to the fatigue and mental exhaustion. It [the project] wasn't the *cause* of it [the fatigue and exhaustion].

43. usually it is some king of body language from the student that [I] interpret for, that will tell [me] that [I need to shift modalities].

44. Sometimes it [the cue] is blatant. Sometimes it's subtle. Sometimes they will ask you. "What did you just say?" or... that's usually the trigger

45. if there is time, I'll augment [the instruction]

46. If there isn't time at the time of the instruction or during the interpreting session, we'll go back to it at a later time to clarify.

47. There's usually a key, a signal, from the person I'm interpreting for that they didn't catch the information. And that's when I shift

experiences mental fatigue interpreting preceding the project; interpreting during the project adds to his mental exhaustion

student's body language alerts interpreter to shift modalities

perceives need to shift from student's blatant, subtle, or verbal cues of missed meaning

augments interpretation of instructions clarifies instruction at a later time if there isn't time during the lesson

perceives a signal from student that he didn't catch the information then shifts

42. mental fatigue from interpreting; added mental exhaustion from the project

43. shifts modalities in response to student's body language

44. student's behaviour triggers shift

45. augmentation of instruction during lessons

46. clarifies instruction after lessons

47. modality shifting prompted by student's signal

48. I've retained enough of the ASL that I can switch around [signed: change (from one to another)] to clarify

shifts to ASL to clarify when interpreting in ESL

48. modality shifting to ASL to clarify

49. [using ASL only] was extremely tough. To think in ASL structure and take the [English] message and interpret it in ASL structure took longer to think through the process because... more thought had to go into how I would structure the sentence

extremely tough interpreting in ASL because more thought had to go into how I would structure the sentence and it took longer (than ESL)

49. interpreting into ASL more difficult than into ESL

50. [using the ASL] I had to think way more than I had to using the ESL. I had to think about the structure [using ASL].

identifies use of ASL only as adding to mental fatigue in project

50. mental fatigue from interpreting English to ASL only

51. the overall nature of the project would be *great* for any student coming into a mainstream setting

identifies literacy project as *great* for students entering inclusive settings

51. identifies positive aspects of the literacy project identified

52. [the project] would help our understanding of where they are at with English literacy and their understanding of it and the structure which would give you a strong base to go from through the high school years

perceives that the literacy project would aid understanding of students' needs throughout high school

52. perceives literacy project as useful

53. when he was like that
[uncooperative], it was more
than frustrating to the point
where you could get extremely
angry.

54. in the debrief you
could get into black humour
uhm ... nothing that you would
intend to do or say, really, but
you would say it.

55. [the debrief] it
doesn't stop you from getting
angry but there is nothing you
can really do with that anger
except, you know, dispose of it
somewhere else, you know, - -
you can't dispose of it on the
student (chuckles) as much as
you would like to

56. there were times
when you just didn't want to
deal with this individual

responds to
uncooperative student with
feelings of frustration and
anger

release of feelings
through black humour in the
debrief

recognizes the debrief
doesn't prevent anger and
recognizes inappropriateness
of releasing anger toward
student despite desire to do so

periodic desire not to
work with student

53. feelings of
frustration and anger with
student

54. release of feelings
in debrief

55. debrief doesn't
prevent anger or conflict
between personal feelings
and professional judgment

56. preferences
sometimes in conflict with
professional commitment to
student

B4: SECOND ORDER THEMES

1. Considering legitimate reasons for modality choices
2, 4, 14, 15, 17, 21
2. The changing nature of modality preferences
18, 19, 20,
3. Using modality shifting in response to the student
3, 7, 43, 44, 47, 48
4. Striving to improve communication
3, 7, 45, 46
5. Difficulties interpreting the message successfully
1, 3, 8, 13, 22, 49
6. Sources of frustration in interpreting
5, 7, 11, 12, 23, 24, 37, 53
7. Mental cost associated with interpreting
39, 41, 42, 50
8. Experiencing conflict while interpreting
6, 10, 16, 56
9. Processing feelings about interpreting
25, 27, 28, 29, 30, 31, 54, 55
10. External factors influencing the interpreting process
35, 36, 37, 38, 40
11. Development of emotional relationship with teacher
26, 32, 33, 34, 35, 36
12. Insights gained through the experience of interpreting
51, 52,
13. Appreciation of the interpersonal dimension during interpreting
9, 26

B5: HIGHER ABSTRACTIONS OF CLUSTERED THEMES

A. Interpreting as a dynamic process

- 3. using modality shifting in response to the student
- 4. striving to improve communication
- 5. difficulties interpreting the message successfully
- 6. sources of frustration in interpreting

B. Reflective self-analysis as part of interpreting

- 1. considering legitimate reasons for modality choice
- 2. the changing nature of modality preferences
- 12. insights gained through the experience of interpreting

C. Psychological features of interpreting

- 8. experiencing conflict while interpreting
- 13. appreciation of the interpersonal dimension during interpreting
- 9. processing feelings about interpreting
- 11. development of an emotional relationship with the teacher
- 7. mental cost associated with interpreting

D. External factors influencing the interpreting process

- 10. external factors influencing the interpreting process

B6: TRANSCRIPTION OF INTERVIEW

P: I would like you to tell me about your experience of interpreting when someone else is determining the modality.

J: When you're confined to a strict modality of a particular kind it makes it extremely limited in what you can do to communicate the message that is being conveyed to a deaf person from the hearing person in that the deaf person relies on either one or two ways of communicating or they may have a preference as in case of the situation we were in the subject was fairly reliant in either modality in this case either ASL or ESL although there were times when he would like to use both. So when set with one particular kind, some days went better than other days.

P: Just for clarification, when you say ESL⁴ you mean English Sign Language?

J: Right. Yes.

P: Alright. So you said that it was limiting?

J: In that in a in a outside a clinical situation in interpreting with a client, you may swing from on one to the other. You can pull from both. Or you can go with English if that is what is preferred or with ASL if that is the preferred, but when it is set there is no going, using, borrowing one from the other modality to use in the other. That's when it becomes confining. And sometimes hard to get across to the subject in this case I found sometimes.

P: What were you feeling when you were in that situation?

⁴ESL as used by the interviewee is synonymous with sign English (SE) and Manually Coded English (MCE).

J:Umm....As it was clinical, I wasn't, I wasn't frustrated in the point that that was the nature of what we were trying to do, because .. and the subject was also 'Okay' with that -knowing that that was the method of communication for that day - although I can't speak for what he was feeling. Sometimes you get that feeling that it was kind of frustrating but it was okay for me because that's what I had to do, so if a concept didn't get across it was repeated and if it didn't get across, it didn't get across. That was the basis. If it was outside the situation and I was working in an interpreting situation where the modality was chosen, I think it would be more frustrating because that wouldn't be what you would normally do outside of the that situation

P: Because of the clinical reason, you just accepted it in ways you wouldn't have in any other situation?

J: Yeah. If I was outside the clinical setting and I was told this is the modality that *had* to be used even though that wasn't always beneficial for the person I was interpreting for, yeah, I would be more uncomfortable with that situation.

P: Okay. You talked a bit about when you were in the clinical situation, you would just have to repeat and you wouldn't have any alternative. Can you describe for me when or how you would decide to use an alternative in the natural setting?

J: In the natural setting, um, ... in the natural setting, I would use whatever was getting the message across...however it would get across. If, normally I'm working with a client who prefers ESL which is mostly what is used in the educational setting, that would be okay, but there are times when there are concepts which have to be got across to the person you are interpreting for, in which ESL is not going to work. Um... and you can tell that it's not working because they just kind of get this glassy-eyed look on their face. Um ... so you automatically throw in something in an ASL structure or you would clarify, either in English Sign Language or you would clarify in ASL. And that's what you do normally and I've done that many times. In our clinical situation, I was restricted from doing that although there were probably a couple times that it happened naturally anyway. I'm not sure. I suspect there were times when I probably did it.

P: How did you actually *feel* about the conflict of using only one modality?

J: I don't know if I felt frustrated for myself or frustrated for the subject that was taking part in the work.

You're looking for success realizing that being unsuccessful is okay as well.

I'm used to success in getting the message across. That's your goal as an interpreter, so yeah, there are conflicting feelings when the message isn't getting across because you're used to doing whatever you have to do to get the message across and in that situation you were limited in what you could do to get the message across, and because of that, I would feel some frustration with that because I wasn't allowed to do what the full interpreting requirement would be: which is to do whatever you can to get the message across. In this case, if you didn't get the message across, that was okay because that was the modality you were using that day but it was still very frustrating.

P: So it was frustrating because it was limiting?

J: Limiting and ... the professional nature of the occupation is to get the message across, and it was almost a juxtaposition to have it not be okay - - to not get the message across. or for it to be okay not to get the message across. That was somewhat, that was *hard* to get used to.

P: How would you feel now, after that experience, if somebody asked you just to use one modality?

J: Outside of the clinical situation?

P: Yes.

J: I would use the modality preferred by the client that I was working with, no question. Um..., but if I felt it was limiting communication, I would use some ASL; I would use other methods to get the message across in clarification in ASL or ESL. And if they say the communication is ASL and the client later on says that they prefers English Sign Language, then.. and I was instructed to use ASL, I would probably switch to whatever the client wanted because that is their preferred method of communication. So, you go with what the client wants, basically,

unless there is a, unless there is a - specific requirement that you are being asked to use a specific modality. If it is ASL and you're asked to use English Sign Language to improve their English skills, then I can understand that, but if the goal is still getting communication across, I would augment with ASL if I had to, using mostly English Sign Language.

P: So, there can be a conflict between what the client wants and what might best achieve your purpose?

J: Um.. there can be a conflict in what the professional experts are requesting and what the client prefers.

P: How do you feel when that happens?

J:..... Again I would, depending on what the goal is, if the goal is, mostly the goal is always to use English Sign Language because that is what is used in the educational setting and I haven't had a lot of experience outside of the educational setting. So, I understand the goal and the need to English Sign Language in the educational setting because the goal is to have them understand English structure. But, if, um, the goal is also to get the message across from the instruction that is going on in the classroom and English Sign Language isn't cutting it, then you have to swing into something else which is usually an ASL supported method of communication. And, again, if you're not using it that often, then I think that's perfectly okay. I mean, that should be the goal. The goal should not be strictly the using of sign language but the message. If the ..if the instructional information isn't getting across, then there's no point because if they don't understand the lesson, how are they going to progress on to the next day's lesson and so on

P: So that's what you would do, but how would you feel about being in that situation.

J: [clears throat] I ...am 'okay' with that. If I was called because I was using more ASL than what somebody thought I should be using, I think it would be justified. I mean I can justify.. and if the justification wasn't good enough, then I guess we'd have to clarify as to what is it that we are trying to achieve as a professional team.

P: Do you have a preferred modality when you sign?

J: Now, it is ESL.

P: Now?

J: [Nods head in affirmative] Because I've used it so much. I would have extreme difficulty using ASL totally. I doubt if I could take a job if I had to use ASL as a method of communication. I could use it as an augment, but now it's over two or three years. I've used so much of it. You just get used to one method of communication. I have to really work hard now to understand the ASL structure.

P: One of the things I wanted you to talk a bit about was whether or not there were any changes in your preference for using either the ASL or the ESL as the project progressed.

J: [Long pause to think] It's hard to say at that point in time. I think the subject was comfortable in either modality although there would probably be a preference for more ASL-based but understood a considerable amount of ESL. That's a hard one to -- I don't know if I'd picked a preference at that point in time. And I don't think I picked a preference. I just think it became something that happened over time. I never chose a preference it was a learned method of communication in an interpretive situation for educational settings. So it became ESL. It started off as ASL.

P: I could see how that could happen.

J: I learned ASL. I didn't *learn* ESL. ESL was kind of learned on the job. While in your training you're taught in ASL.

P: In the project, where the goal was to improve English literacy, did you have any thoughts on which you would prefer to use for English literacy before you entered the project?

J: I think for English literacy you *have* to use the ESL structure. But the frustrations were that there was a great deal of confusion for the subject in to a lot of the proper connectors to use in English structure, so a lot of errors were made in that method. Um. And that became -- not surprising -- but it kind of supports the information that we had going into it: the subject wasn't strong in English but understood a lot of English. I don't think the project assisted in his understanding of English literacy..... It would have to have been over a considerably lengthier period of time. And in the case of the project, I think for English literacy we got to this subject probably later than we should have. And that's not just the team, that's what happened educationally. He went into high school with ASL background. So it made instructing in English literacy extremely hard and so within the project, it became clear where the gaps really were.

P: I was wondering if you could describe a specific episode or uh session during the project.

J: Not specific. Generally when the subject was overall I would say not uncooperative but not into on that particular day, so a lot of time was spent refocusing to get back on track, okay. Each session should not have taken as long as it did. But there was a *lot* of time spent refocusing [the student] and that became, that was the most frustrating part of the whole program.

P: I'm hearing you use the word frustrated a lot. (Jack laughs.) Could you tell me more about that.

J: Um.... (pause to think) I guess overall frustration when things are more difficult than they have to be. That was the case with the subject sometimes. Compounded by the fact that you're frustrated in the fact that you have a strict modality to get the method of communication across. So you are working with two levels of frustration: 1) you have a subject who is unfocused, which is hard enough. It is hard enough to get a message across to someone who is focused, to a deaf person who is focused on what you are doing, but when they are *unfocused* and you are restricted to the method of how you can communicate the message, that becomes even more frustrating.

P: So, inside, how do you feel when you know your message isn't getting across?

J: Within the project, it was ... I was okay with that because it was okay not to be successful. That was part of the structure, it was okay not to be successful in getting the message across. Although you'd kind of wonder at the end of the session whether or not it was the method of communication or the fact that the subject was unfocused. So sometimes, you're not sure about that particular day, could it have been more successful if the subject had been more focused, and I think that that's where I was looking for more success but you spent more time focusing the subject.

Externally, outside the project, it again depends on the mood of the client. If the message is not getting across because of clarity, then we'd clarify. Again if the subject, the client, isn't focused, it depends again on the mood of the client you are working with because if they're just not into the lesson that day, then I'm okay with that too. They have a right not to get the message.

P: How do you handle your frustration right then at the time when it's happening?

J: At the time, you ... within the project, um... you did the best you could to focus the subject and just plowed on as best you could. It was after, in debriefing, that you dealt with frustrations.

P: Okay, tell me about that. What would you do?

J: At times you couldn't believe it (chuckles). And sometimes you'd know the history of the day. Um... so if the subject coming into the session, was unfocused for the afternoon we'd know that it was pretty well going to carry over into the project. um.. but that still doesn't negate the fact that you're frustrated with the whole process. Because you'd had an unsuccessful afternoon in which a lot of information just didn't get in [to the student] and then you'd have a session in which you're trying to do a project and you know partly it is going to be unsuccessful because of the unfocused nature of the ..what you're dealing with.

P: How did you deal with that? Can you give me an example?

J:(Thinks) I think we would talk about just the session itself, affirmation that it was more the subject than how the interpreting was going was somewhat of a relief I guess. Sometimes you feel 'Is it me? is it me?' and it's not. I'm doing well, and when you're in a debriefing situation and the instructor is also feeling the unfocused nature of the session, then there's some kind of affirmation of how you're feeling. Then there's more frustration. And so it wasn't only me who was frustrated but the instructor was frustrated as well. Not that you could do anything about that, but...

P: It made you feel better?

J: In that you did the best that you could that day with what you had to work with, yeah.

P: I was going to ask you as well, since you had mentioned about the instructor, just how was your experience of working with that teacher?

J: Um... it was very pleasant. The instructor was understanding um... of what everybody was going through - myself as the interpreter and the subject as well. And I think it became a point in time where the instructor could read the subject before I had to say what kind of day it was. At first, I had to kind of come in and give a quick run down of what I'd expect to happen and after a while I didn't have to do that. She could always tell.

P: So the instructor got to know the student better?

J: Oh yeah. Very much so. So that, the instructor could read what was going to happen that day.

P: How would you describe your working relationship with that teacher?

J: Positive. I mean, you're both doing the best you can to get the message across. And there were times when the instructor would assist in trying to focus the student in what was the goal of the session. And that wasn't always an easy process. So, supportive, I would say.

P: What about your experience of working with that student, How would you describe that?

J: Within the project?

P: Yes.

J: (laughs) Okay. Um within the project it was ... (head drops, shoulders sag) I don't think I can separate the project from the overall um relationship outside the project as an interpreter /tutor counselor kind of situation. It was more of a continuation of that relationship within the project. um Within the project itself, the frustrations that were felt were equal to some of the things that we would deal with on a daily basis. So, I didn't see anything different within the project than I saw outside the project in the nature of being unfocused and not into it on certain days and on other days being really into it and really wanting to work hard and succeed and then the session would go rather quickly. But other days, no ... And it was the same feeling outside the project: when the student was into it and focused for the day it went a lot easier of course but if he was not focused the day was longer.

The sessions were long. Tiring, exhausting, draining. And the project would happen at the end of the day traditionally, after the summer. So if it was a tough day, it was a *tougher* session. Because it could be up to 45 minutes long and the session *really* didn't have to go beyond 20-25 minutes. Tops. So there was a point, I would say, some days in the project where I was fighting exhaustion. And mental fatigue more than anything.

P: What contributed to the mental fatigue?

J: The preceding day going into the project, *not* the project itself. The project would sometimes add to the fatigue and mental exhaustion. It [the project] wasn't the *cause* of it [the fatigue and exhaustion].

P: That gives me a pretty good feeling for what it was like. I'm just going to take a minute to see if I've missed anything I should have asked you about.

I want you to walk me through what happens when you are interpreting and you decide to shift modalities. Describe it through your eyes.

J: Um... Within the project?

P: Generally.

J: Generally, in an [educational] interpreting situation, you go with interpreting in ESL modality. Everything is going fine. You are clipping along and there are no problems and usually it is some kind of body language from the student that you interpret for, that will tell you that. Sometimes it is blatant. Sometimes it's subtle. Sometimes they will ask you, "What did you just say?" or... that's usually the trigger, and what will happen is, if there is time, I'll augment. If there isn't time at the time of the instruction or during the interpreting session, we'll go back to it at a later time to clarify. Usually I try to clarify as we go along because that locks in the information and then pick up [signed: enter into] the instruction. That's basically when I decide to shift. There's usually a key, a signal, from the person I'm interpreting for that they didn't catch the information. And that's when I shift.

P: How do you feel about that?

J: That's okay. I've retained enough of the ASL that I can switch around [signed: change (from one to another)] to clarify. Then I go back to ESL.

P: You said that now you feel more comfortable using ESL. If you take yourself back to the beginning of the project, how did you feel when you were using the ASL during the project.

J: It was extremely tough. To think in ASL structure and take the [English] message and interpret it in ASL structure took longer to think through the process because I'd become more used to interpreting in ESL. So at that point in time when the project came along, I was beginning

to be more comfortable in the ESL structure. And ASL, I would say, more thought had to go into how I would structure the sentence.

P: So, then, if you were at that same point and the next day you were required to use Signed English, how would you feel about that?

J: I was more okay with that. I would also add that using the ASL, on the days we were using ASL, would add to the fatigue I was feeling in the session because I had to think way more than I had to using the ESL. I had to think about the structure [using ASL]. If I was using ESL it was just a matter of interpret what you're hearing. You don't have to worry about structure. Um... So it [ASL] was more fatiguing than on other days. If we'd already had a bad day going into it, it [using ASL] would compound the problem of getting the message across. It became harder if you also had to refocus on an ASL day -- exhausting!

P: Okay.

J: I'll just add that the overall nature of the project would be great for any student coming into a mainstream setting. Um, because it would help our understanding of where they are at with English literacy and their understanding of it and the structure which would give you a strong base to go from through the high school years.

P: That's interesting. I'd like to hear more about this feeling you have about that.

J: Just to add, that I think the earlier you can do it the more beneficial it would be because it would give you a clear understanding of where they are at. And the earlier you can do it, if the chosen modality of communication is going to be ASL, then you have to know where they are at from a very early age. Um ... if it isn't caught then, certainly as soon as they enter the mainstream setting, um, if they come from a segregated institution, um because then you know what you have to work on. And it's important that you know what you have to work on because you are facing, eventually, a high school diploma, general or academic provincial examination. And on those exams there is no forgiveness. You basically have to know what everybody else knows and I've found that in the nature of this student that we worked with when it came to diploma exams there

were areas where there was no way he could have understood the questions, at least a few of them anyway. So I think that if you know what you are working for you can have a greater chance of success with the diploma exams and if ... um I'm babbling now (chuckles)(restarts) It would give you a greater chance of achieving a success with the diploma exams at the grade twelve level.

P: Okay. Good Observation.

I'm going to go back to a topic we touched on before. You talked about your fatigue in the sessions. So I'm wondering if you could tell me a bit more about your debriefing process in terms of dealing with the feelings.

J:(Pauses for 25 seconds before answering) There were times in the debrief where, uh, it was extremely hard to separate the ongoing relationship with the student and how the session went. Uh..... the relationship with the student was of course long term [2 years] at the time of the project so there were lots of emotional attachments. Um and lots of emotional feelings deep down. So, on the days when there was an uncooperative attitude, not only for the sessions but throughout the day, um, you know that he could have done better, so my basic feeling was that he was just being a little jerk that day. And he was getting into that mode. And when he was like that, it was more than frustrating to the point where you could get extremely angry. So in the debrief you could get into black humour umm umm and

P: So, humour was one of your strategies for dealing with the frustration or anger?

J:Black humour. There is a substantial difference between humour and black humour. So nothing that you would intend to do or say, really, but you would say it.

P: For example?

J:I can't remember. I don't know.

P: Who would you debrief with usually?

J: For the project, it would be the instructor. for the project. Generally, it would be the coordinator for the special needs students at the school. To the point where he [the coordinator] couldn't believe what he [the student] did that day: not paying attention, not bringing his homework done, realizing the consequences that would happen... it doesn't stop you from getting angry but there is nothing you can really do with that anger except, you know, dispose of it somewhere else, you know, - - you can't dispose of it on the student (chuckles) as much as you would like to but.... laughs. There's just sometimes you want to smack him up the side of the head but uh.... So using the debrief [signed: process], expressing the anger and frustration, in a positive way was how you dealt with. It didn't take it back that it was extremely - - he was being a jerk, not focusing, making life extremely difficult for you, pretending sometimes, he would pretend that he didn't understand what you were saying, but he knew exactly, he understood what you were saying. Um.. those were the days when it became tough ... and there were a string of them together, there were times when you just didn't want to deal with this individual, that day.

P: That would be difficult.

J: That was the frustrating thing.

P: Thank you for sharing your thoughts and your feelings about your experience because it is certainly an experience that I've never lived through.

You had mentioned that at the end of the sessions you would sometimes feel frustrated, or angry or fatigued and so you would go through debriefing. Can you tell me about your feelings and how you debriefed relative to those feelings?

J: (Heavy sigh) There was only a need to debrief on days when there was a struggle to focus the student to get through the session. And as I had mentioned earlier, that could be compounded from the fact the student had been unfocused through most of the day prior to going into the project at the end of the day. Uhm.... during the session you just deal with the frustration, go on, try to get the best that you can that day. During debrief it was uhm comforting in that the instructor was feeling the same kind of emotions.